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THE
ANTHROPOLOGICAL REVIEW.

No. XXIV.

JANUARY, 1869.

THEORIES OF HUMAN ORIGIN.

IN the opinion of most of the anthropologists of the present day, it is as yet premature to pronounce, or even to form an absolute decision, upon the question, whether man's origin was unique in its occurrence, or accomplished at several points of time or place. During the short course of our investigation of man's real antiquity, facts have but rarely and feebly borne direct witness in the case; collateral evidence, derived from existing characters, is but too liable to be vitiated by party spirit; no wonder, then, that to the judicious anthropologist it seems proper to wait for a larger and clearer mass of testimony before venturing to try conclusions upon a subject so obscure. It may, however, be observed that it is far less difficult to take this position, than to preserve it consistently. Many an unconscious partisan, while professing to discard "plurality" and "transmutation" alike from the vocabulary of his faith, is unable to conceal from others his affection for a chosen theory. We must, nevertheless, admit that in the present incomplete state of our knowledge of archaic anthropology, to pretend to issue a bull decisive of the rival claims of unity and plurality, would savour greatly of the profundity of Dogberry and the temperance of St. Athanasius. It would, indeed, be scant wisdom to consider this problem ripe for complete solution until its premise, the method of organogeny, has been found capable of demonstration. The apparently wide divergence of opinion upon this preliminary point, would seem to argue ill for its speedy settlement; and as long as its students are baffled either by insufficiency of light or by obliquity of vision, it behoves the truth-winner, who weighs polygeny against monogeny, to keep the scale-beam upon the pivot. But while this cautious reserve is perfectly justifiable, nay, laudable, the expediency of maintaining it does not withdraw the license granted by science itself, of adopting provisional opinions in accordance with the data at present supplied by observation or in-

ference. This not only may but must be done by the most circumspect. However ready, however sincere, we may be in protesting that we are not, nor will be, under the influence of such opinions, if they seem to be either the creatures or the creators of hypotheses, in practice we find it impossible to avoid entertaining them. The mind can no more help forming an opinion upon every matter brought within its range, than it can avoid conceiving the ideas which underlie them; and those opinions which relate to questions of scientific importance, demand the most careful expression we can give to them, —the most unhesitating expression consistent with that modesty and forbearance which should be the distinguishing characteristic of scientific utterance. It is not an unreasonable necessity which converts the privilege of the many into the duty of the few, whose judgments have been so tried by their labours as to command universal respect. In some minds, indeed, devotion to practice seems to beget a contempt of theory; but there is probably no man of science, however lofty his position and severe his method of investigation, who can long sit, Jove-like, on his Olympian summit, and from that high but hard seat of fact look down unsympathisingly on the discussions of meaner mortals: who can long hear the appeal of hope or distress made to his purer wisdom, and refuse—

“The fatal nod,

Which rends the clouds, and proves him less than God.”

Happily for English, and we will add, true science everywhere, the supremacy of fact is undoubted by the great majority of inquirers; although a high authority in this country has approved, by his example, the censure passed by a great German chemist upon the hero-worship paid by us to the father of the inductive system, that method of philosophising will probably be our safeguard till the progress of decrepitude reduces the intellect to its second childhood, and the mind is again let loose to revel in the revelations of the fancy. But it may fairly be questioned whether a blind devotion to facts, and facts alone, be not in reality prejudicial to the advancement of knowledge, even as a monomaniacal loyalty to a reigning house may be inimical to good government. Science is no miser, to gather from every quarter the isolated truths we call facts, and, after testing their value, to hoard them up from all eyes but its own, and all purposes whatever; but rather a merchant, whose capital is in the hands of bankers, by whom it is put to usance, and made subservient to its own increase and the general good. Comparison, arrangement, correlation, are the proper modes of employing our crude wealth, and constitute a higher plane of science than is trodden by him who is a seer of things,—a describer of phenomena, and nothing more. It is

impossible to have recourse to these without being led by their revelations of the interdependence of facts towards general truths, and along the various lines of facts which they define towards first principles. The more conscientiously this is done the better, not only for general science, but for the individual inquirer. There is more discomfort, more peril in allowing vague second-hand ideas to float incoherently through the brain, than in endeavouring honestly to ascertain how far they may be reposing on known facts, or shaped by recognised laws. But if in the examination of the evidence which presents itself in favour of any plausibility, the student discover that the chain breaks off far short of the bottom of that particular well in which he supposes the truth to lie, and if he be, nevertheless, disposed to drop to the conclusion through the remaining space by the simple force of gravity, he is arrested, awe-stricken by that ominous word,—hypothesis. A rational dread of hypothesis is exceedingly wholesome ; but the indiscriminating use which some writers make of the word, as a reproach against the less practically minded, sometimes does more credit to their zeal than to their judgment. The distance is very great between the hypotheses which precede knowledge and defy reason, and those which naturally, if erroneously, rise in explanation of connected series of phenomena. The necessity, which discovers itself in every thoughtful mind, of passing beyond the limits of observation or experiment, and accounting for the relations and sources of the facts acquired, renders it frequently unable to wait for that complete empiricism, without which, satisfactory induction is impossible. This greed for explanation, temperately indulged, is neither unphilosophical, nor, as it has been often declared, futile. On the contrary, it is oftentimes productive of results which mere phenomenal investigation would long fail to accomplish. A speculation, once entertained, acts like Sindbad's cumbersome friend, it compels its victim to labour for its special behoof. Facts are, in reality the only currency in science, but their mint-mark is impressed by criticism ; and the individual opinion, whether friendly or hostile, which thus determines their value, is generally a stimulant, frequently a guide, to the search after further riches. The true danger of hypothetical ratiocination lies, not in any intrinsic vice, but in the bigotry it is apt to engender in certain mental castes, and in the stained medium it interposes between the eye and its objects. The student of science, who avoids these evils, may be excused if he takes any and every opportunity of asserting his liberty of holding and expressing provisional opinions, not only as a personal and most valuable privilege, but as the very basis of scientific truth,—the foundation of intellectual progress, as distinguished from the reception of statements

once for all delivered. It may, indeed, be safely said that there is no opinion current amongst scientific men, not even those whose claim to the title "principle" appears most unquestionable, that is not essentially provisional, liable to modification or even revolution, under the pressure of increased knowledge. In the change which is now taking place in the minds of geologists, as to the igneous origin of granite, we have an instructive instance of the want of finality in the most generally accepted doctrines of science; and were we, at this moment, in possession of such a body of facts relating to the generation of life, or to the accidents of human origin, as would compel us to form an inductive decision upon either of them, its justification would differ from the grounds of current hypothetical views on the same subject in degree only. There would be more evidence, and so far the decision would be safer; but like its speculative precursors, it would not be beyond appeal, nor would the appeal be carried to a different court. It may almost be asserted, that every scientific opinion is speculative. With this "right of search" conceded to him, the student of man, who tends to reflect upon the probabilities of human origin, need not be terrified by the opprobrium of "rushing in where angels fear to tread", or of breeding opinions which, like the royal hunchback, are "deformed, unfinished, sent before their time into this breathing world, scarce half made up, and that so lamely and unfashionable, the dogs bark at them as they halt by them." The comparative utility of confining ourselves to experimental research, or of venturing into the latitudes of surmise, is a question which does not admit of a reply which shall be universally applicable, it must be decided in accordance with the individual bent and opportunities of the inquirer.

Certain it is that whether we accord the implied indulgence to speculators, or not, our generation assumes the privilege of theorising to a very great extent. At no previous time has the mind of thinking men been fixed on this subject, of human origin, so generally, so intently, so discordantly, and, on the whole, so rationally, as now; perhaps, because at no previous time has so great a quantity of materials, insufficient as they truly are, been at their command. The interest we feel in it is, no doubt, quickened by the results of modern research; we view it with the daybreak of science upon it, and it is recommended by the novelty and many-tinted beauty of that hour. Yet there seems to be a peculiar fascination about the mystery of human beginnings, which the mind in all ages has been unable to resist. It is the culminating point of cosmogonies universally,—the point of contact at which systems of mythology touch the earth. Yearning to know more, always coexists with effort to be higher;

education and civilisation are nearly synonymous ; but in the civilisations of antiquity, the mind was all unconscious of the teachings of external nature, it was therefore compelled to concentrate itself upon the being of whose nature it formed part, and in the belief of its own self-sufficiency, it derived from itself materials for strange autobiographies. Every civilisation had its own racial school of thought,—every school its own metaphysical account of human nature and human origin. The Chinese, the Magian, the Hindoo, the Chaldean, the Egyptian, differed amongst themselves in their conceptions and explanations ; they agreed in their inability to look beyond themselves in any other direction than into the supernatural. Later on, the philosopher who had learned to discard the popular symbolism of his race, paid homage to the same imperious question in the schools of Alexandria, Athens, and Rome, with a zeal incommensurate with his materials,—a success which leaves almost everything to be acquired by generations future to our own.

With uneducated man universally, the natural, and therefore trustworthy, mode of accounting for his individual origin is to point to the earth, into which he knows his substance must one day be resolved. Whatever expectations of futurity may have been engendered in his mind, the starting-point of the past is always afforded by the *alma mater*, from whose breast he still derives his nourishment. When the title of a race to its fatherland is in dispute, the strongest evidence it can adduce, the proofs most convincing to its neighbours, are its traditions, that it has arisen from the soil it claims. There is, indeed, a native philosophy which in this respect anticipates the speculations and discoveries of modern science, which assures man that in origin, as in constitution, he is one with the other productions of nature. Neither the savage nor the peasant are capable of conceiving those transcendental ideas of man's nature, which shake the faith of others in his lowly derivation. But though Jew or Gentile involuntarily recognises in the elements around him the materials of his own composition, the mode whereby gross and seeming dead matter becomes invested with the qualities of a moving, thinking being, is to him an unfathomable mystery. Conscious that it is an effect far beyond human power,—ignorant of the subtle and hidden energies at work in and about him, yet convinced that some potent influence must be ever engaged in calling life from out of death,—his mind has no resource but to attribute the work to supernatural agency,—no satisfaction but in stolid content with the unknown. In this phase of its metamorphosis the intellect, if it be able to mount to the level of a pure abstraction, cannot preserve its tenure of an idea so refined. To conceive a life-giving being, itself unpossessed of the known ad-

juncts of life, passes the ability of many a cultured understanding. The imaginative faculty by which the untrained mind is characterised, proceeds at once to invest its concrete object with attributes which, though unlimited in extent, are in kind necessarily mere reflections of the faculties and passions of the thinker, who, knowing nothing higher than himself, can conceive of nothing nobler. Hence the constant creation of anthropomorphous gods, and hence, by interdependence of ideas, the self-complacent notion that man himself, with his so-fashioned God-like features, is an exceptional being, to whose origin, as a reproduction of the deity, anything less than the direct handicraft of divinity was inadequate. Man gave to the gods his image,—what so natural as to suppose that the gods had created him in theirs. Mythology testifies to the frequency, experience to the indelibility, of this opinion among various Europasian races. In no instance, however, is it more forcibly illustrated than in the cosmogony of the old immigrants into Canaan. Chaldæans by extraction and early sentiment, they unconsciously turned their faces to the land of the great rivers eastward, in Eden, as that of their nativity, and, exaggerating its natural advantages, pictured it, under divine culture, the most glorious of the paradises in which oriental luxury delighted. Here they beheld the first man of their red stock, the immediate handiwork of their old peculiar gods, the Elohim, whose man-like faculties having been transmitted from themselves, they were compelled to recognise in their Adamic prototype. Nor did the Gentile mythologies of the east differ from that of the Hebrews in another respect,—in their proneness to trace national origins to the gods by the intervention of demigods; sons often opponents of the deities, and after expulsion from divine intimacy, procreators of human races under the guise of local kings,—the groundwork of all such traditions. The general belief that certain portions of each human type had their origin in special localities, is to some extent acceptable to modern science. Theosophical excrescences eliminated, this fundamental tenet remains, and, whatever its truth, accords with the deductions of a large section of naturalists and anthropologists of the present day. There are, however, those whose zoological principles conduct them to the antipodes of the old creed; and in agreement with them, on this point, is a still larger class of men moving in other circles of science, whose opinion is based, not on scientific grounds, but on the unquestioned tradition of a single race. Nor are there wanting some who have drawn from their study of anthropological science conclusions more or less opposed to the idea of multiple points of origin. Time was when the sole object which stimulated faction-fight was the “when” and “where” of human genesis.

Man at that time appeared, to the majority of observers, a creature endowed so differently to all others, that the nature of his origin excited no controversy. Gradually, however, the great issue has been changed; the "how" must be answered before it again becomes necessary to write books showing, from external manifestations, the probabilities or improbabilities of primordial radiation.

The theories of human origin, which now compete for the favour of the scientific world, may be thrown together in three or four classes. Of these, the oldest and most generally respected is that which, accepting the definition of the term "species" as it was settled by the fathers of zoological science, regards it as representing, not merely an established ordinance of nature, but a "divine idea", and attributes the generation of the forms included within its impassable limits, to evocation out of nothing by the fiat of the First Cause. With every desire to avoid disparagement, it may, perhaps, be said that this opinion is held by those who have either paid no particular attention to biological inquiry, or are under the influence of extra-scientific prepossessions. The same tenacious faith in the reality of the thing called species is, however, compatible with a totally different explanation of its origin, proceeding from men who claim to reason only on physiological grounds. According to this account,—which is, as far as its present office is concerned, the materialistic,—the primary origin of species is simply due to those chemico-vital energies of matter which are known to cause the subsequent development of the individual, and continuation of the specific organism. But, of late years, the sharp outlines which defined the idea of a species, have nearly faded from the minds of many able investigators, and in the school which they have founded, the word remains as little more than the convenient expression of the systematist, bearing the same value in respect to nature as that of genus, family, or order. They who sin most deeply against the venerable and, as we are warned, most fundamental principle of zoology, are those who have undertaken to explain that gradual elevation of organised forms which is undoubtedly visible, on the large scale, to the geological eye. If we must believe the transmutationists, as they are somewhat irreverently called by their opponents, no distinct origin whatever can be assigned to the conventional group termed a species. Since the hypothesis with which we are required to start endows every organism with a tendency, or at least a potentiality, of changing its form under the pressure or permission of changed conditions, and since conditions are always changing, the species of yesterday may, or rather must, become the different species of to-morrow. Accepting this explanation of the rise of existing species, in whatever sense the term is

left to us, it is clear that the actual origin of them all has to be sought at an immense distance of time and organisation. But when we yield to the guidance of the theory, and are conducted down the long line of life until we reach its ultimate limit,—when we contemplate our almost structureless first parents, and ask what gave them birth, our Mentor is silent,—it is not as yet the province of development to trace the origin of the living point. If on this subject we question the advocates of that theory, they break up their bar, and speak as theologians or materialists. Some of them, however, are among those who endeavour to steer a middle course between these extremes. Believing that reasons can be adduced which, though not experimental, are sufficient to prove the existence of immaterial, or at least insensible being, conjoined with ponderable matter, they are led to ascribe, with more or less confidence to this “principle of life”, the production of living beings, as a consequence of its association either with preexisting organisms, or with so-called inert matter ripe for organisation. The life-principle itself is considered to be by some the creation of, by others an emanation from, the Universal Spirit. The organic matter necessary for its sublunary manifestation has, in controversial exigency, been declared to be the primitive form of matter itself. Both life and organisation are thus created mysteries, totally beyond the pale of human comprehension. Unless some other theory be found to satisfy the inquiring mind, it will be wisdom to accept this without attempting to understand it, until that time arrives—which appears to be anticipated by a celebrated anatomist—when we shall possess “powers of penetrating the problems of zoology, so far transcending those of our present condition, as to be equivalent to a different and higher phase of intellectual action, resulting in what might be termed another species of zoological science.”* Meanwhile, it may be as well to consider whether all other theories are so palpably false as to render it necessary for us to wait for more elaborate brains.

The general and the specific origins of life are, in reality, two distinct issues; but the considerations relevant to each are so intimately connected, that it is not advisable to attempt to give them separate attention.

Since the theory of development denies the definite origin of species, on the one hand, and on the other does not profess to throw any light upon the primitive birth of life, the question compounded of these two particulars rests, in the first place, between those who think that the production of life required the immediate action of the First Cause; and those who consider that the natural forces, which

* Owen, *Comp. Anat. of Vert.*, preface, xxxvii.

we are accustomed to call secondary causes, were equal to the task. Though we may possibly shrink from so blunt a statement of the matter at issue, it is our duty, as candid inquirers, to look it boldly in the face, and decide the question impartially, whatever sacrifice of early prejudices the decision may call upon us to make. We have to determine between creation, in the ordinary acceptation of the word, and evolution,—to say whether the production of living organisms, by the immediate act of the Deity, be a proposition probable in itself, and consistent with the present state of knowledge; or whether the organic has been evolved, by natural processes, out of the inorganic. It does not appear that any *à priori* reason, arising out of the nature of organisation, can safely be given in favour of the former of these opinions. The line of demarcation between compounds of the elements in an organised and unorganised state, though not absolutely obliterated by the modern chemist, has been of late greatly attenuated; their comparative rank in the system of nature will certainly not justify the idea that one composition may be readily effected, the other be totally impossible without Divine interposition. If, therefore, we assume the position of advocates for organic creation, we must fall back upon extraneous reasons in its support. These appear to be two,—the authority of revelation, and the concurrence of human tradition as to human origin; but these two are in reality one. If the former prove, on sober reflection, to be untenable, the latter at once falls to the ground, since no man could know that he had been created by the direct exertion of the Deity, unless it had been revealed to him; the concurrence of tradition, assuming that there is such a thing, testifies, therefore, not to the fact, but to the belief in the revelation of the fact.

We will assume that this belief has spread from a single source, and that the biblical account is an inspired production,—we will consider it to have been, as it undoubtedly was, intended to be taken in its literal sense. It is at the present day universally conceded to science, by sensible interpreters, that the bible was never meant to teach natural history, or any other kind of secular knowledge, formally or indirectly. On such subjects, its statements—sometimes correct, sometimes incorrect—were always adapted to the intellectual acquirements of those to whom they were addressed, and necessarily so, for otherwise they would have been utterly unintelligible. Whether we are of opinion that Moses was the inspired author of the whole of the Pentateuch, or that its first section, the *Berayshith*, is composed of narratives from Chaldaic pens still more ancient, in either case the genesis was described to people who—in common with all those, especially of the east, who claim a national ancestry—attributed their origin

to the gods. Before an audience totally ignorant of anything relating to the subject but themselves and the ultimate operator, to refer to creative processes would have been not merely useless, but an infraction of the scheme of inspiration, which we now know excluded mere philosophical knowledge. No doubt a Creator can be imagined to work without means ; but the question is not what he might have done, but what he did ; and the silence of the Bible is an argument neither for nor against the use of whatever means were naturally required for organising purposes. Unless intermediate agencies are expressly referred to, we have a mental habit of vaulting over the interval of thought which should be occupied by them, and speaking of an effect and its ultimate cause as directly related. At the present day, for example, coroners' juries, who always proceed on the principle of taking *omne quod ignotum pro magnifico*, would, if required to sit upon a new human production, solemnly pronounce "born by the visitation of God"; and everyone who believes in a First Cause may, popularly speaking, refer to it as the original producer of his own and other organisms, even though he be persuaded by post-Chaldaic science that a train of secondary causes have, in reality, intervened. The ascription of life-production to the *Elohim* immediately, only proves that the Jews or Chaldeans were not *savans*. If then, tradition, without previous revelation, is of no value, and revelation in that age of the world necessarily omitted unintelligible particulars, the mode of organised production is left an open question, to be freely discussed even by those who are sincere believers in the divine legation of Moses. But we shall here be met with the assertion that, whatever may be the case with other parts of the world of life, man stands upon a totally different footing ; in other words, that the secondary causes, which might have been sufficient for the generation of brute nature, though themselves emanating from the Supreme Good, were altogether unable to form an image of that Good. This is a perfectly gratuitous assumption, to which replies in abundance may be concisely given. In the first place, if man's superiority be held to consist in a special immaterial principle, it may be said that the Creator was as able to produce the immaterial out of the material, by certain means provided by himself, as he was to produce the material out of nothing by other such means. It is equally reverential to the First Cause, and more so, to believe that he worked by his own ordinary laws, as to suppose that he created man by special patent. The Jewish record nowhere asserts explicitly that there is a difference between man and lower animals, so essential as to require a different source of derivation. The origin of the phrase "image of God", has been already explained. Being thus left dependent upon

investigation, we find that the difference between organised and unorganised compounds is insufficient to render the conversion of the one into the other supernatural, although at present it may be superhuman. As the tendency of discovery is to identify the forces which regulate their respective existences, we have therein presumptive evidence that the forces under which they commenced were radically the same. We know nothing of production without a natural medium; and it is therefore unphilosophical, without necessity or proof, to attribute organisation, human or other, to causes beyond experiment. The advocates of the sufficiency of natural modes of organisation, expose themselves to the declamatory charge of seeking to deprive the Deity of the glories of creative work. The odium is utterly undeserved; for until it is asserted that matter could be self-creative, and the forces belonging to it self-productive, the true dignity of the First Cause remains intact,—nay, increased by the superior homage we must pay to the agent endowing matter with the power of accomplishing its highest destinies.

The most sincere upholder of Divine Intelligence may therefore, without repugnance, take part in the inquiry now remaining, whether organisation be the product of efficient agencies, alien to those which cause the lifeless combinations of matter; or whether both of these may not, with better reason, be ascribed to causes identical in their nature.

Of late years, a very important change in the mode of viewing the phenomena of life has taken place in the minds of those who, being most intimately acquainted with all that relates to the living tissues, are most competent to form a reliable judgment. Like all scientific truth, the doctrine of vital operation, which is now commanding the assent of the physiological world, has passed through a severe ordeal of crimination, in addition to the more legitimate trial of criticism. It has, perhaps, been peculiarly unfortunate in its power of touching to the quick the prejudices of that class of scientific men who are unprepared to substitute new inductions, however palpable, for old habits of thought, however unphilosophical they may be demonstrated to be. It is not difficult to reach the source of the hypothesis which, until a comparatively late period, occupied the place of an intelligent comprehension of the nature of vital reactions, and thereby greatly impeded physiological progress. Aristotle conceived, first, that the whole world was provided with a principle of vitality,—an intelligent being, or *Ens*, whose office it was to superintend the origination of every form of organisation capable of earthly existence, and so to regulate the proceedings of each as to produce those harmonious results which have been the theme of admiration to reflective man in all

ages. Second, that an emanation from this universal "soul of the world" was localised in each distinct organism, forming a subordinate soul, to which was committed its individual welfare through all the stages of its life, and which he seems to have regarded as the cause, both efficient and final, of its beginning, its perfection, and even of its corruption. But the animating principle of the individual organism was not, according to the great philosopher, a homogeneous entity, but a composite being; one portion of the whole *psyche*, the *nous*, or mind, being so far separable from the rest as to be capable of existing independently of the body: though, during life, in intimate union with the *psyche*, and forming with it the total "animating principle." These two beings, thus invented, were received by philosophising Jews, adopted by Roman sages under the names *Anima* and *Animus*, consecrated by the Fathers, illuminated by doctors of the dark ages, and, finally, appear to the popular mind—innocent of knowledge of Greek conceits—as expressions of divine truth. But though the distinction thus made between the compound *Ens*, in charge of the whole man, and the constituent which was invested with the glories and responsibilities of its spiritual existence, has been handed down to our days, and accepted in the popular doctrine of a conjoined "vital principle" and "mental principle", building up and actuating the body, its adaptation to the revelations of science has not been effected without extensive modification. It is now rarely held that the two "principles" are in their nature even temporarily identical. The different results of their labours in life, proved to the minds of those who believed in them that they were separate beings. The "vital principle", raised to an independent existence in the body, naturally received a further accession of dignity; its adherents could not resist its logical claims to be considered capable of preserving its individuality when its connexion with the body and the mind had ceased; and though some hesitated to go so far, and contented themselves with vague ideas that its existence was, in some way or other, dependent upon that of the body, the general result was (according to notions now in course of explosion) that the body was patronised by as many tutelar godlets, in proportion to its wants, as were the contending hosts of the *Iliad*; and the products of the dissolution of this imaginative partnership could be described in Horatian verse,—

"Terra tegit carnem, tumulum circumvolat umbra,
Orcus habet manes, spiritus astra petit."

The whole doctrine of an "animating principle" comes to us, as we have seen, from the porticoes of Athens; but the innovation which conferred immaterial rank upon the "vital principle," arose from an unwarrantable, though oftentimes unconscious, abuse of terms in

modern physiology. In the progress of research, numerous phenomena presented themselves to the investigator of the constructive, adaptive, and reparative properties of the tissues; and, as they accumulated, it became more and more obvious that they were all produced in obedience to law. It was assumed that all were referrible to one and the same energy, and as none of the known forces of external nature appeared competent to bring about effects so mysterious, a convenient expression was required, not, indeed, to define the nature of their cause, but, as was professed, merely to serve as a nominal bond of union, and to obviate the necessity of periphrasis. The metaphysician (sometimes the same person with the physician), was at hand with a long established term useful for the purpose, and "vital principle" was transplanted into the language of the physiologist, who constantly protested that he did not employ the term in any theoretical sense, but merely as a provisional name for a set of reactions of whose causative stimulus he was ignorant. The process of transferring to a denomination the properties and powers of a concrete being was once more strongly illustrated; even in the course of a single volume, "vital principle" forgot its modest rank as a *vox et præterea nihil*, and asserted its substantiality as "the vital principle," to be ultimately debated about and fought for with all the reverential zeal inspired by a dogma. It was not, however, to be expected that the acumen of science would long be imposed upon by a feat of verbal juggling; not only has the expression been reduced to its pristine insignificance by frequent exposure of the unphilosophical nature of the hypothesis built upon it, but the necessity of using it at all has been swept away by the discovery of the protean modifications of which the material energy is capable, by the recognition of the slight difference between some products of the laboratory and others of the organising processes, by the knowledge, that in both cases the same combinations may become the subjects of analysis and recomposition, though the products may be different; that the same polar disturbances ensue from chemical and vital reactions; that the processes are carried on in dependence upon the same physical properties, as elasticity and endosmosis, and that there is no such a thing as "inert matter," motion being the common property of inorganic and organic substances. It is true that a living cell has never yet been produced by the chemist; it is equally true, that a crystal has never been formed by magnetism, yet, we know that magnetism is but a modified form of galvanism which readily determines the formation of crystals. It is evident, therefore, that the general tendency of observation is to identify the physical and vital energies with each other, and on the other hand, no observations have been recorded essentially antagonistic to that identity.

This progress, in our conceptions of the nature of vitality, produces, amongst others, two effects important to our present purpose. Any interest we may feel in prosecuting the investigation of life to its fundamental issue is greatly invigorated, and at the same time, the probability of obtaining from that investigation a reliable result is increased or rather created; while vague notions that life processes are due to the power and intelligence of an immaterial medium were in the ascendant, it was clearly absurd, not to say blasphemous, to attempt to trace the stream of life upwards, in time, with intent to explore the hidden springs of its origin. Now, however, that the conviction is becoming settled, that life in its several organic manifestations is but the natural product of natural operations, we may, perhaps, be allowed to pursue our course uninjured by invectives such as those which have been hurled against the organic chemist for presuming to stretch his profane hand towards the sacred fount.

But, however fully persuaded we may be by physiological facts, that there is nothing in the nature of vitality which requires the intervention of a special agent, there is another class of observations which may tend to confirm, though, in itself, insufficient to form that judgment. Few subjects have excited greater interest, perhaps enthusiasm, among a certain class of experimenters, than the supposed possibility of organic formation without the preexistence of a germ. It is unfortunate for the credit of science, that the term "spontaneous generation" should have been adopted for the expression of the expected phenomenon. There are, undoubtedly, many impressed by it with the notion that science thereby attributes to organisation a power of volunteering itself into existence; whereas, all that is meant, is the possibility, that under certain conditions artificially procured, vitalisation may be set up in unorganised materials independently of known methods of germination. That such must have been, or still may be the case, more or less frequently under conditions supplied in nature, is the only logical conclusion possible to those who see in life developments but the evolution of a material force, for no reason can be given why the primal initiation of life should have taken place under laws different to those which govern its after course. The only permissible doubt, therefore, is whether those natural conditions can be reproduced by experimental arrangements. This is a problem surrounded by peculiar difficulties, in number and magnitude sufficient to tax ingenuity to the utmost. The experimenter, in brief, has not only to provide the necessary means for the production of organisms, but to effect this in such a manner as to satisfy the most captious objector that germs of all kinds were utterly excluded. It would be rash to affirm that the two requirements will never be

fulfilled; it would be equally rash to say that the approach made to the realisation of the object in view has in any instance been sufficiently near to justify the assertion of its practicability; of the many examples of extragerminal production adduced, few, indeed, have been subjected to a competent scrutiny, but the common result of these examinations—vitiation of the conclusion sought by imperfect isolation from germ-bearing media,—establishes a presumptive case against the rest. The materio-vital theory has not, therefore, received from this method of investigation an absolute demonstration of its truth; it is, indeed, probable that its general acceptance will be the result of observation rather than of experiment. But, though a decisive answer has not been given in its favour, a candid examination of the circumstances in which many of the experiments have been conducted, leave little room for doubt that the probabilities of the presence or absence of germs were in those cases about equal; while in a few others, the balance of evidence seems to preponderate on the side of the latter. Even if we hold that the whole of such experiments have hitherto offered no encouragement to those who relate vital effects to the productions of other material reactions, the burden of proof to the contrary, rests with those who see in the asserted failure a refuge for their destitute “vital principle.” On the other hand, whatever practical reason for doubting the truth of that assumption arises from the investigation, it gives the whole of its authority to the opponents of the immaterial hypothesis. It may, indeed, be objected that the most decisive instance of extragerminal production would not, of itself, overturn the opposite opinion, unless it could be shown that the immaterial agent itself was incapable of coming into practical existence together with and under the conditions necessary to the organism appropriated to it. It will not, however, be necessary to discuss such a question seriously, until the mode in which a “vital principle” originates or obtains a settlement within an organism be definitely conceived, reasonably established, and generally accepted—until we are educated to perceive, either, that it is by a creative act, as occasion requires, by the incarceration of one of the principles supposed by some to be floating in the air ready for use, by the continuity of the “principle” of the new born with that of the parent, or by union of the male “principle” with that of the female,—while those who are versed in the natural history of these creatures, find these little matters beyond their powers of explanation, persons of feebleness of imagination would not be justified in attempting the solution of problems with which they have no concern.

When, then, we become acquainted with the original source of the popular and lately scientific notion, that there exists within the body

an immaterial medium of organic life,—when we perceive that the hypothesis, at its introduction into physiology, did not even pretend to a foundation in fact, that it is surrounded with difficulties and absurdities, and that it is an utterly unnecessary mystery-making about matters purely inductive and referrible to known laws,—we cannot hesitate to condemn the hypothesis as wholly unworthy of the present state of knowledge, and further, to ascribe the origin of organisms to the modification of material force which produces the subsequent effects of generation and development. It is by no means necessary that we should be at once able to determine the exact nature of the vitalising force or forces, or to point out the other modifications of force to which it is most intimately related. We are informed by the sun's rays of the quarter in which it will rise, long before we can examine its disk; and other forces, whose modes of action are now fairly known, long baffled the investigators of their correlation. In the present case, the effects are infinitely more complex and diversified, and partial ignorance of their source is not a reproach, but a stimulus; while confidence that we are seeking in the right direction, is a strong encouragement.

But if we accept without hesitation the general truth of the proposition, that organic beings are the effects of some form of the physical force, we naturally ask, Does this offer a satisfactory explanation of the origin of mankind? Can the production, as well as the maintenance, of every degree of organisation from the vegetable monad to man, be attributed to this as its direct cause? It is from the combined testimony of geology and physiology that we can alone hope for a reply. The life-history of the earth, revealed by the former, assures us in unambiguous terms, that the life of the individual is, in its great features, repeated in the career of all natural aggregates, from the least in extent to the greatest of those whose whole course can be traced in the deposits. Each of these is seen, more or less distinctly, to have had periods of life,—cycles of development, following each other in regular succession, and homologous with those of our own birth, immaturity, adolescence, and prime, with their constant sequelæ, decay and dissolution. If, then, at several points in the existence of such groups, we perceive that it has undergone changes, which are attributable only to processes similar to those which bring about similar results in the individual life, it is difficult to avoid believing that the commencement, both of the individual and of the group, has been effected by the same methods. The life of the individual, at its origin, is simply the vitality of a single cell, which is either gifted with the faculty of so modifying the action of a uniform vital force, as to allow the development out of itself of a

perfect exemplar of the species to which it belongs, or being itself passive, of receiving the impression of whatever modification of that force may be necessary for such development. The question is, whether the life of the first individuals of a natural aggregate commenced in its adult or primitive cell condition ; whichever conclusion we adopt with regard to the unit, should be transferable to the numeral. Among those who recognise some form of material energy, whether purely chemical, physical, or resulting from any of their combinations as the efficient cause of life, some are of opinion that organisms have been brought by it into existence in their highest stage of development. But when we contemplate the exceeding complexity of structure which obtains in animals comparatively low in the scale of organisation, and the great diversity in the functions and products of their tissues, when we reflect that there is no real analogy between such combinations of many proximate principles and the constitution of the most intricate substance obtained artificially by organic chemistry, we cannot suppose that so vast an amount of elaboration has been accomplished by a single process. This would be to imagine an extraordinary substitute for that gradual building up and consolidation of the fabric which require for their completion continuous operation during definite periods of immaturity. Such an occurrence appears rather supernatural ; and, unless this is a mistaken view, it is necessary to withhold assent from the doctrine that mature forms of organisation, at least of the higher types, have been produced by the direct action of physio-chemical forces. It seems as reasonable to imagine that the steam engine in its working state is a single casting of different metals, effected by a mode of operation which is certainly employed in the formation of any one of its parts. Rejecting this idea as inconsistent with the constitution of adult life, we cannot, of course, regard any other stage subsequent to the initiatory one as more probably that in which formative action was primarily set up. It is, indeed, only in rudimental structures that we find the simplicity which alone appears capable of proceeding from extraneous sources. We have now to consider how this view of organogeny can be extended to group-origin. It may be said, that if we refer life origin to the germinal cell of the individual, and regard the adult as its development, the same idea must, by our own analogy of the individual to its group, be extended to all natural aggregates : that is ultimately to the whole animal, and, indeed, vegetable kingdom. A conclusion, which is really that of the Lamarckian theory, pure and simple : a primal monad at the base of the whole series. Such a termination of the argument is certainly plausible, and were the theory of uniform development from the lower to the higher more

agreeable to observation and consistent with principles at present accepted as sound, we should not hesitate to adopt it. But geology bears unflinching witness to the fact, that the progression of life forms has not taken place by consecutive steps of ascent. Certain forms, or groups of forms, persist in making their appearance before their proper time, and disappear before others inferior to them obtain their systematic characters. Zoology, likewise, testifies that the view of natural affinities on which the doctrine really leans is not tenable. Organisms are not capable of being arranged in that linear order which would appear to be the necessary result of the continuous eduction of one structure from another. It, moreover, is a contradiction of our ordinary conceptions of the operations of nature, to suppose that the production of life has taken place but once in the world's history. Our experience of nature, the foundation of all reasoning upon such matters, tells us that frequency, repetition, is the law of laws; that the material forces are continually at work, and their effects constant. Finally, we must dismiss this explanation of group-origin in the form usually presented, because, amidst all the destruction of old prejudices and transmutation of new, caused by discussion for or against the theory, permanence of type during definite periods stands erect and unharmed; no fact inconsistent with its elasticity, by which is meant its power of stretching and returning to its original condition, has been adduced from the past or in the present, able to shake our confidence in its truth.

But what is the alternative? If we say that there has been but one mode of life production for man and brute by the action of material forces; if we say that the result has not been a state of maturity, but the first steps of specific life; if we further say that the difficulties in the way of believing that the evolution of life on the large scale can in anywise be considered a uniform ascension, are insuperable; then it would appear that the sole resource left to us is to adopt the presumption that the conditions necessary for organised life have been so arranged as to allow germs of a special nature, that is capable of evolution into special forms, to be produced and sufficiently developed for the ultimate establishment of the group whenever its existence in the natural system became requisite. Have these germs arisen in dependence upon, or unconnected with pre-existing organisms? There is a very obvious objection to the latter supposition. Recurring to the ordinary method of individual origin, we know that the early stages of development out of the germinal cell take place in most, if not in all cases in continuity with, or at least in attachment to cells of the parent. If, then, life were first established in an independent germ,

how could embryonic development have gone on without embryonic surroundings? In the case of an inferior type, especially one of those inhabiting fluids, it is not extremely difficult to suppose that a germ might be produced and the ovum developed from surrounding materials sufficiently to enable the new animal to commence its automatic existence. It would not be altogether safe to say that in the case of some oviparous classes the process would be altogether impossible; but amongst viviparous animals, and those whose egg-born young depend upon parental support, such an origin of new species seems quite inadmissible. By way of evading the difficulty, much might, perhaps, be said about our knowledge of numerous animals which are evidently embryonic stages of higher structures, although they pass through the complete cycle of life; the metamorphic changes taking place in many invertebrates might similarly be quoted as examples of foetal development in a separate state. But in the latter case, the caterpillar and butterfly, for example, are one and the same individual; in the former, the proteus for instance, is embryonic only in a general sense—it is an unchanging type of imperfection. These examples, therefore, are very far from removing the difficulty before us. In reference to man, for instance, we should have to assume that there have at times existed human embryos and infants in the literal sense, so situated as to be able to pass in the usual methods and periods from that state into one of maturity. It is, of course, unnecessary to say that observation and reason are alike wanting in support of such an idea; and, indeed, it seems to involve a greater miracle than the immediate production of an adult by external agents.

If the chemico-physical theory prove itself inadequate to account for the rise of both the germ and the adult, we have, as it would seem, no resource but to attribute specific origin to some process of organic evolution. The conclusions to which we are led by the theory of development as it is usually presented, are as we have seen, too inconsistent with the facts of Zoological science to permit their acceptance. The great principle on which the theory is based, the tendency to vary, is within due limits a sound one; the companion principle, the tendency so to vary as at the same time to elevate by permission of circumstances, is at present open to great suspicion. That a disposition, or an impulse to vary does exist in the organised world in much greater force than was formerly admitted by naturalists, is incontestable; it is not, however, its prevalence, but its intensity which forces it upon our attention. The indubitable fact, that it is sometimes manifested very strongly, has given birth to the hasty assumption that it is the common property of organised life; but

the truth seems to be, that it is possessed only under certain conditions of life. There are numberless cases in which not the slightest tendency to throw off varieties can be detected. The suggestion that this failure is due to uniformity of circumstance, is not only purely hypothetical, but rendered very improbable by the fact, that a species will frequently exist under different local conditions without exhibiting a proneness to vary. The presumption that there is a centrifugal force constantly tending to enlarge the organic radius rectilinearly, and compelling every species to struggle to differ from its prototype in the ascensive direction, appears to be without sufficient foundation in nature. It is an unnecessary hypothesis if a probable account can be otherwise rendered of the variability which is displayed by certain groups. If we carefully and comprehensively examine the natural history of most of those species which possess the greatest amount of variability, we find that this tendency is but one of several concomitant characteristics analogous to, if not identical with, those which belong to the individual at the most vigorous period of its life, that is, at the most typical phase of its personal development. But the naturalist is well aware that in an organised group the most typical portion is by no means the highest in point of general structure. If, then, we concur with the advocates of development so far as to derive the origin of one group from a germ given off by another, we are forbidden to look to the most highly organised part of the parent group as the source of the new development; but to that which is the most mature relatively to the other members of the group, and by virtue of its maturity, the most procreative. May we not suppose that the power normally possessed by the most typical form may occasionally be intensified by extraordinary vigour, or by some constitutional peculiarity; and that germs of higher, but cognate characters may be thrown off when requisite from the surface of a type, while the type itself is (not transmuted, but) passing onward through its regular stages of life. Looking at variability as one of those physiological characters of adolescence which comprise amongst them a greater amount of adaptability than is possessed at any other period of existence, we cannot regard its possible effects in pushing out new types as eventually dependent upon external conditions. The typical characters of each natural group are retained even by those species whose decadence shows it to be in the last and feeblest period of its existence—a conservatism which appears incompatible with the elevation of a type by transmuting influences around it. Few, indeed, will dispute the truth of the principle which lies at the base of the development theory; perhaps no one, from the biblicist to the materialist, will deny that some force is, or has once been at

work whose effect upon the general economy of life is ascensive change—the effect is patent, it cannot be causeless. In the ordinary view of development, we contemplate this force acting directly upon the animal through the channel of external conditions,—we are told, that of the numberless accidental varieties which every type may constantly produce, those only succeed which happen to be suitable to surrounding circumstances, somewhat as though the flight of the rocket were generally due to the chance spark from a catharine wheel. The theory has many recommendations ; but it creates more difficulties than it explains. If, instead of a lawless appetite for mutation, it be possible to substitute a power of expansion exerted in, and as an element of, the prime of specific life—if we may reject the fortuitous slave of local circumstances in favour of an expanding germ of the old form, evoked in consequence of its general congruity with the life conditions and fellow beings of its period, we shall, perhaps, have lost nothing that development can give us, and gain much that is wanting to Darwinism,—the countenance of physiological experience, and the satisfaction of recognising order in the operations of life. To some, it may appear a recommendation of this mode of accounting for specific origin, that it relieves us from the necessity of ascertaining each minute grade of ascension between forms next akin and yet far removed. The germ, which, from whatever cause receives an impulse towards permanent expansion may be thus enabled to produce a being considerably higher than its parent ; and, as in the case of the lowest existing man and the highest present ape, intermediate forms may have been passed over in the embryo. But the probability that such has really been the mode of human origin must depend very much upon the age to be attributed to the earth and apes of the present day. Is that aberrant group immature or decrepid ? If it has buried no records of a life superior to that in which we now observe it ; if the number of its individuals, varieties, and species has never been higher than now ; if its elasticity under the strain of climate was never greater ; it is difficult to suppose that it has had vigour to throw off a new type so far in advance of itself. But the present apes give tokens that they are in the stage of natural decay ; the scanty relics of old world quadrumana do not indicate a more feeble life ; and it is, at least, impossible to say that the present groups are not the perishing remnants of the ape-folk of pliocene forests. Yet, until we have learnt that the group enjoyed its meridian of life when man first placed his heel fairly on the ground, all relation of origin between the two is merely conjectural, incapable of being moulded into a well favoured opinion. In such uncertainty, however, all views of human origin, except those of unreason, are at present involved. The tangled

skein of nature will require many a year of patient unravelling before we can trace the threads of life from end to end. It will be well, in this behalf, to do our spiriting gently. Prejudice and loud assertion make lingering haste—they pull out the slack but tighten the knots; modesty is our “only wear,” work and wait our safest watchword.

THE FORMATION OF THE MIXED HUMAN RACES.*

By M. de QUATREFAGES, Professor of Anthropology in the Museum of Natural History, Member of the Institute, Honorary Fellow of the Anthropological Society of London.

The Crossing of Races in the New World.—“South America,” says M. Perier very justly, “is the great laboratory of the modern mixed breeds or hybrid nations.” Let me add that Central America and Mexico, in this respect, may be placed upon nearly the same footing as the more southern countries. It is especially interesting, then, to study out in all their details the results of the vast and varied experiments which have been worked out, or better still, which are now only commencing upon this extended field. And it is precisely this that M. Perier has done. He has collated an immense number of papers, and has examined the questions which they suggest. He has considered successively the origin of the Mestizos, the Mulattoes, and the Zambos, but we cannot follow him into all these details. We will content ourselves with some general observations.

M. Perier recognises the fact, that in the crossings of races the inferior is bettered, and acquires a relative degree of superiority. But, according to him, this elevation is purchased only at the price of a degradation of the superior race, so marked that in fact there is a deterioration in the population.

Now, even by taking the facts as he presents them, I see no reason for accepting his conclusions. Evidently, M. Perier, in forming his judgment of the mixed races, takes for his standard of comparison a European of pure blood, as he is, or rather as he ought to be, among ourselves. He fails to bear in mind the real point of departure or standard of comparison, i. e., the Creole. If our author had only

* This article is an extract from the *Report on the Progress of Anthropology in France for the last twenty years*, made by Prof. Quatrefages, at the request of the Minister of Public Instruction.

applied to the mixed races the same considerations which some pages further on he has made in the case of the white colonies, if he had only remembered who the parents were, he would have been, I think, less severe on the children. He would have been still more indulgent if he had taken into account the moral and social condition in earliest infancy of these classes of society, too often the children of debauchery on the one hand, and on the other of degradation. Generally in America the white man despises alike the native and the negro; the native in turn regards the negro as beneath himself. The offspring of these different races are almost always and necessarily outcasts. What else could that be which is born and raised in reproach? Is there among the purer white races any stock whatsoever that preserves under such circumstances an elevated and moral position? No; and from these two points of view man will always be degraded by reason of the contempt which will be heaped upon him. This simple observation explains why it is that the Zambo, an intermixture of the Indian and the negro, is generally conceded to occupy the lowest position in the scale as regards these two points.

Perhaps I ought to say something concerning the mixture of the white man with the native American. Here the facts are so well defined that it is necessary to lay special emphasis upon them. This race plays, in Mexico and other places, a part undisputed, and for that matter indisputable; in many respects indeed it constitutes almost the entire active classes. Some of the men who have exercised the greatest influence upon the destinies of their country have belonged to this class. Has its influence always been a happy one? Certainly not; and that which is now transpiring in the South American republics only tends to substantiate this charge.

But this aspect of the question should be examined separately, and we will revert to it again.

Let us continue to accept without question (and this we may readily do) the facts as M. Perier presents them.

Now the mixed races in question are charged with physical degeneracy! But the very authors quoted by M. Perier seem to me to be almost unanimously of the contrary opinion. Those of them who have drawn the least favourable sketch of these races, have depicted them as "robust, indefatigable, sober," (Max Radiguet.) Some, moreover, declare them equal and even superior to the pure-blooded whites, (D'Orbigny, Martin de Moussy, d'Azara, etc.) And the oral proofs which I have received fully confirm these estimates, (César Daly, E. Reclus, etc.) Bear in mind, too, that they (as well as their indigenous ancestors) are wholly acclimated, and their rapid multiplication will astonish no one. We shall then understand the foresight

of those who look upon this race as destined to become nearly if not entirely the governing class in certain parts of South America.

While I allow my own opinions to be influenced by M. Perier's, I meet with no traveller who states that the mixed races are notably inferior to the whites as respects intelligence. The most critical of them acknowledge that they have "much of intelligence, spirit and imagination," (Raynal, Perier.) But in general, the charge made against them is in the use they make of their faculties. They are almost everywhere indolent, passionate, and addicted to gaming, always ready to foment civil discord, etc. Admit it, but let us compare this estimate of their moral character with that which M. Perier has drawn in the case of the Creoles, and still again, the distinction between the pure bred white and his descendants, too often disregarded, will not appear so very great. This is, moreover, a question the consideration of which we shall resume farther on.

M. Perier devotes a special chapter to the Paulistas (inhabitants of the Province of St. Paul, in Brazil.) With pleasure do we follow him into this field, but at the outset we must correct some of his statements of fact regarding the origin of this celebrated people; facts accepted without qualification by the author, although coming from prejudiced sources, as M. Ferdinand Denis long since pointed out in his "History of Brazil."

The Paulistas did not in their beginning spring from the unrestricted and unlicensed intercourse of the roving bands, of all sorts of ancestry, with the native American women, (as stated by various authors cited by Perier.) These first intermarriages were not forced by violence; quite the contrary. The founder of the colony, Alfonzo da Souza, in connection with some Portuguese, to whom were also added a few families from Azores, established himself without violence in the midst of the Gayanazos, a native race, at that time peaceable, and devoted to the chase. As they increased, this colony allied itself with the Carijos, a warlike and cannibal race, but also cultivators of the soil. Such were the elements concerned in the formation of this mixed race.

But it is important to remark, that from the very first the mixed marriages brought about by this coalition of races were regulated by the advice of Fathers Nobrega and Anchieta, who were the apostles of Christianity in those countries. Moreover, their common dangers united intimately the whites, who remained unmixed, and the Mamelucos, who were the result of the interbreedings. As for these last, their moral and social status was here quite different from what obtains in other places. Almost from the very commencement of the colonisation they were regarded as the equals of the Europeans, and in this

instance they escaped the arraignment of the law which in certain cases is carried so far as to interdict regular marriages among the crossbreeds, and to condemn them to that life of debauchery which subsequently becomes their reproach.

What has been the consequences of a state of things so rarely realised? It is just that which M. F. Denis so strongly depicts, and his testimony is confirmed in most points by the very statements of the most bitter enemies of the Paulistas. So far as concerns their physical characteristics, no one denies to this people a remarkable muscular strength, and a power of resisting fatigue to a very extraordinary degree. The women are acknowledged, even in Brazil, as superior to all others of their sex. The men are remarkable for the general expression of their countenance, and for the fire of their eyes, which are usually brown, and but rarely blue. "Some families in the province of St. Paul have kept themselves free from all intermixture, and they love to call attention to this exceptional position. We can say, however, that these are not the ones who are noted for their beauty." (F. Denis.) Morally, everybody recognises in the Paulistas a rare energy, an indomitable courage, and a spirit of enterprise which equals, if it does not surpass, all that displayed by the European conquerors of the country. They have given evidence of these qualities from the very outset, and that too in agricultural labours as well as in the adventurous undertakings I am about to relate. No sooner had they increased their numbers in the plains of Piratininga than these places were put under cultivation unknown in the other districts. The sugar-cane brought from Madeira was cultivated first by the Paulistas, and they were the first also to raise large flocks, which became to them a source of wealth.

But, as is well known, in the sixteenth century people of such a nature and disposition as this would with difficulty settle down to peaceful occupations. Their institutions and customs permitted others. Traffic in negro or Indian slaves was authorised; the search for gold was esteemed an occupation worthy the bravest of their leaders. Thus these two pursuits became a favourite occupation of the Paulistas, and in them they accomplished wonders. United into little companies, each of which was commanded by a tried leader, they extended their forays from the Amazon to Paraguay, in the face of a thousand dangers from the country, the vicissitudes of weather, and the people. From these excursions they returned with thousands of slaves, whom they put to work in cultivating their fields. One of the most celebrated of these bands of the seventeenth century reckoned upon its lands a thousand Indians capable of military duty.

In these raids, it is pretty clear that the Mamelucos of St. Paul

showed that they were no more humane or refined than were at that time the pure-blooded Spaniards, who, if occasion demanded it, chased the natives with blood-hounds; that they were no less unscrupulous than in our day are the Circassians and the Tcherkesses, when they make forays into the plain. Above all, made ferocious by the very terror which they appeared to have everywhere inspired, they respected neither the slaves of others nor of the Jesuits themselves. These last, assailed in their sources of revenue, and seeing their converts removed from their control, and frequently by force, complained most bitterly. They described the Paulistas who robbed them as brigands, and finally induced the Pope to excommunicate all the possessors of Indians. At this turn of affairs the Paulistas drove out all of this religion in their own provinces, and they were then accused of having renounced the Christian religion to return to the local superstitions.

Such, it seems to me, is the truth of the past history of the Paulistas. They were a people peculiar to their time, a people infinitely more hardy, adventuresome and energetic than their neighbours. Unfortunately this people, who were simply children of nature, were attacked on the one hand by educated classes, and on the other by the religious orders, and finally, they were painted in the blackest colours. It is not surprising, then, that M. Perier should have found in the writings of the Jesuit Charlevoix and his associates, as well as in those who repeated their accusations, some exaggerated calumnies. Still we must remark, at the outset, that as regards the imputation of idolatry, we do not find charged against them anything more than was permitted at that time among the most pure-blooded whites.

But, finally, even had the Mamelucos of St. Paul been everything that their enemies represented, it is only just to inquire whether they have remained in the same condition that they were in during the sixteenth and seventeenth centuries. Now, on this point, all the testimony is in accord, and M. F. Denis has merely summed it up when he says: "During the later years of the eighteenth century, we observe a change taking place in the character of the Paulistas, to such a degree, that this active but turbulent people have acquired a reputation only for bravery, generosity, and sincerity, that contrasts most strikingly with the habitual spirit of violence and cruelty observed among the more ancient colonists. At the present time the most happy moral development, as well as the most remarkable intellectual progress, appears to obtain in the Province of St. Paul."

M. Perier accepts this testimony, but he attributes the change to the fact that the Paulistas of our day, crossed and recrossed with other stock, have gradually become assimilated to their European

origin, and have, so to speak, no foreign blood in their veins. I refrain from citing here the so decisive passage which I have already quoted from M. Denis. The comparison between the families of pure white blood, and the mixed, is by no means to the advantage of the former. But I will examine a little more at length this question proposed by my colleague.

To sum up, we see that the intermixture of four distinct races or peoples gave birth, in the province of St. Paul, to a hybrid race, which in physical characteristics was equal or superior to the Creole races that remained unmixed; which governed all the neighbouring races by its warlike energy, in times when war, so to speak, was the normal state; which, changing with the general condition of society, came back to more peaceful occupations, and in peace still preserved its superiority. Does not this fact in itself speak volumes? Does it not show what should take place in a majority, if not in all, the races formed in America by intermixing? Does it not throw a light upon the influence which the social and moral condition, under which a race has its birth, exercises upon the destinies of such race?

It remains for me to say a few words concerning the mulatto, the offspring of the European and the negro. I have already examined this question from various points of view, and I will here lay special emphasis upon the intellectual, moral, and social aspect of the same.

Let me say a single word upon a physical characteristic on which M. Perier has laid considerable stress, namely, the beauty of the women. Long ago we knew, and all travellers have been unanimous on this point, that the mulattoes, quadroons, etc., of our colonies are, in this respect, but little inferior to the more pure-blooded Creoles. From the testimony which I might cite, I will here adduce only that of M. Taylor, whose observations were made in the little colony of Tristan de Cunha. In this island the fathers were all white, either Englishmen or Hollanders from the Cape, the mothers were all negresses or mulattoes. "All the people born in this island are mulattoes, but very slightly coloured, and of most admirably proportioned stature; almost all of them have more of the European than the negro type. Taken together, the young girls were so thoroughly beautiful, both in face and figure, that I do not recollect ever having seen any more so, and that, notwithstanding the fact that I am familiar with all the sea-shore countries, Bali and its Malays, Havana and its Creoles, Tahiti and its nymphs, the United States and their most celebrated women." The physical beauty of the mixed blood of black and white is certainly not to be disputed. Let us then return to considerations in reality of more importance.

Remember, at the outset, that the white and the black are both

foreigners in America, and that the difficulties of acclimatisation, which are there very severe on both races, must exercise, so to speak, a double action upon the product of their union. Remember also under what conditions these unions are ordinarily made, and do not forget the prejudices against colour, so powerful almost everywhere in the colonies. Would it be strange that a race of people formed under conditions so unfavourable should be inferior, in a marked degree, to the superior of the two races concerned in this formation?

Nevertheless, no one points out this evident inferiority. M. Simonot, who, in this question, generally adopts M. Perier's conclusions, contents himself with saying that the mulattoes "are far from realising, as a rule, a physical or intellectual progress proportioned to the races which gave them birth." In other passages, he acknowledges that "among these mixed races we meet with instances, both male and female, of a remarkable type of beauty, and we find also that their intelligence places them on a level with the most perfect of the white race, but these cases are the exceptions to the rule."

The observations I am now about to quote, relate particularly to the crossing of races on the borders of Africa. M. Rufz, who formed his conclusions from what is taking place at Martinique, tells us "from all these facts we are warranted in concluding that the interbreeding of the white and the black races has exercised a favourable rather than an unfavourable influence upon the resultant race." This last testimony, coming from a physician who has scientifically studied the evidence, and who has passed the greater part of his life in the country of which he writes, is all the more important from the fact that the negroes imported into Martinique, as well as into the other French colonies, generally come from the coast of Guinea, and are consequently inferior, as we have already seen, at least to certain of the black tribes of Senegal.

This entirely modern appreciation of the question confirms fully the impression which the reading of the evidence relative to the history of the mulatto of St. Domingo has always left upon my mind. There, the men of colour, as we know, multiplied in a remarkable manner. Had they had the same means of instruction, they would have come at once to an equality with the whites, who were degenerated by idleness and their absolute control in government. In the terrible struggles which they have had to maintain against all parties, we see them displaying a courage equal to that of any white race whatsoever. More than decimated by the blacks, under the despotism of Soulouque, and under the force of threats of extermination made to them by the adherents of Vaudoux, they still had a revival of learning. And if this took on a somewhat peculiar form, the fault, in

reality, must be ascribed to their former masters, who had left in the island scarcely any literature beyond the romances of the previous century and a few volumes of political addresses. Notwithstanding all this, the literary men of Hayti have shown, especially in the drama, the germs of a remarkable literary faculty. (D'Alaux.)

In his "*Nouveau Voyage aux Iles d'Amérique*," Father Labat, after having spoken of the beautiful figure and of the vigour of the mulattoes, and after saying that they are "adroit, industrious, courageous, and hardy beyond imagination," speaks of their high-spiritedness. This trait in their character, which is marked almost everywhere, astonishes M. Perier. But, had the question related to an unmixed race, he would not have so readily expressed his surprise.

The same traveller adds, that they are fickle and devoted to pleasures. But can we not see here an instance of hereditary transmission from the father's side? Finally, he accuses them of being skulkers and vicious. But what else could the mulatto be, placed, as he is, between the blacks, on the one hand, who thoroughly hate him, and the whites, on the other, who, after having given him hope, and transmitted to him sometimes even their noblest aspirations, grind him down with crushing contempt?

Again, is it not just to ascribe at least a part of these bad qualities to their social condition, and ought we to make the mere crossing of the races responsible for the results inevitably entailed by the local circumstances of birth? The answer to this question is found in Brazil. There the prejudices of colour, far less violent than in other places, have not prevented the mulatto from taking his merited place in society. The old laws, fallen into disuse before the customs of the people, do not arrest him at the threshold of a liberal career, and there is no one who cannot recall instances wherein this result has been reached. Some have reached the very highest places in the administration of government. In addition to the proofs which I have cited elsewhere and to those which are accepted by M. Perier himself, I am able to add confirmatory oral evidence recently received by me.

M. Lagos, among others, has confirmed all that M. de Lisboa had already said relative to the superiority manifested in art by the mulattoes over the two parent races. Almost all the Brazilian painters and musicians belong to this mixed race. Their scientific aptitude also is equally well developed. A large number devote themselves to the study of medicine, (Lagos,) and very many have become celebrated as practitioners.

Observations to the same purport have been received from many other sources. M. Torrès Caicédo, former *chargé d'Affaires* of Vene-

zuela, writes me: "We find the same virtues and the same vices among the whites, the mulattoes, and the Indians." Then he adds a list of mulattoes distinguished by various titles, and among them figure orators, publicists, poets, and a former vice-president of New Grenada, "a distinguished writer and excellent administrator."

In a word, then, and to judge from all that we know of them, we can say of the mulattoes of Brazil and of many other countries besides, what M. Thevenot says of those with whom he was associated, "The mulatto may be all that the white man is. His intelligence is equal to ours." Let us add that he is born thoroughly acclimated to the intertropical regions, and let us bear in mind that a magnificent future awaits this too long down-trodden son of the negro and the white in countries that perchance are the most privileged on the globe.

The Origin of the Present Europeans.—If the crossing of races were in itself a cause of degeneration, as M. de Gobineau thinks, it is difficult to say to what a degree of inferiority European nations would have reached. There are but few places on the globe where nations have been so often intermingled, blended, and juxtaposed as on our soil. Archæology, philology, history, comparative mythology, etc., all strive daily to determine with more precision these ethnical elements, and at various times questions of this nature have been raised in the Anthropological Society. The origin and determination of the limits of the Celtic race have been especially the subject of numerous and profound studies. MM. Broca, Bonté, Lagneau, and Pruner-Bey, have on several occasions summed up the facts already known, and presenting them under their different aspects, have brought out the results of their own special researches. The works of M. Van der Hoeven, on the Fins and Magyars, have furnished M. Pruner-Bey an opportunity of making known his own upon the same subject. MM. Broca and L. Leguay have explored our own soil, and studied from an anatomical and archæological point of view the contents of the ancient tombs, etc. But I cannot enter into detail of these labours, the full appreciation of which would demand frequently a knowledge that I am deficient in, and which, moreover, touches upon special anthropology. I content myself then by merely indicating the general results arrived at.

M. d'Omalius has considered the question of European origins, taken in its totality and also in its numerous ramifications, in one of those short and ingenious epitomes in which our illustrious confrère knows so well how to sum up his learning, which is so vast, and his doubts, which occasionally border upon scepticism. Planting himself upon the broad ground of history and philology, and starting

from the recent discoveries in palæontology, he asks whether in the beginning of the present order of events the human races were not distributed almost as they are in our day ; whether the Europeans were really of Asiatic origin ; whether the languages with flexions would not have spread sooner from Europe into Asia, than from Asia into Europe ; whether the Irish, Welsh, low-Bretons, and Scotch, in place of being derived from Asia, were not more likely descendants of the autochthones of western Europe ?

M. d'Omalius has thus revived the argument originally enunciated in France by M. Henrici, and subsequently in England by Latham. These two authors go even to a greater extreme than our learned colleague. The first, admitting, with M. d'Omalius, that events have always followed in the same order, asserts that the west has always overrun the east. Consequently he is led to regard the Sanscrit language as derived from the Celtic ; he does not hesitate to look upon all the languages styled *neolatines* as offshoots of the Celto-Ligurian or Gallic tongue, a simple dialect of the old Celtic, which is preserved even to our day under the name of the Provençal dialect ; he considers the Latin itself to be directly derived from this mother tongue, which, moreover, had no small influence upon the Greek. It follows, then, that both peoples and languages have migrated from the west toward the east. Latham recognises the fact that history is silent upon the original migrations ; but, resorting to the *à priori* method, he thinks that they ought to have taken place from the larger to the more circumscribed countries, and he concludes that the original seat of the Sanscrit ought to be in the east or southeast of those countries where the Lithuanian is spoken, and that its origin is European.

The opposite opinion, as is well known, is the one maintained by the generality of modern ethnographers.* In the Paris Anthropological Society, this view of the question has found many and earnest supporters. And if M. Dally has brought up again the doubts expressed by M. d'Omalius, M. Chavée, on the part of philology ; Lagneau and Bonté of history ; Bertrand of archæology ; Liétard of history, philology, and mythology ; and Pruner-Bey, in almost every point of view, have corroborated by new proofs the generally accepted opinions.

When we look at the imposing army of proofs, drawn from all these so different sources, and all pointing to one and the same conclusion, we can no longer doubt, it seems to me, the reality of this great fact, namely, that the modern European nations are children of Asia, and sisters of the races which have peopled India and Persia. An elder sister of all these races—an evidence of the primitive Aryans—still exists in the higher mountains of Bolor and Hindookoh.

Under the name of *Mamoges*, they still maintain against the fanaticism of the Afghans, their independence, their ancient customs, and their religion, almost Vedic in its character. These people have, undoubtedly, to a much greater extent than the Greeks under Alexander, impressed upon their neighbours of Cachemire those habits of regularity which characterise them, and which it is said are even more refined than among the nations which we are accustomed to look upon as models in this respect, (H. Smith.) All the recent observations of M. Lejean only tend to strengthen these conclusions, which in my opinion could justly be drawn from the facts previously known.

But, did the Aryans on arriving in Europe find the country unoccupied? No, we can confidently, at this day, assert. The man who in France was coeval with the long-haired elephant, the rhinoceros, the great bear of the caverns, and the reindeer; this man preceded the Aryan race upon our soil. He, in all probability, occupied the whole land, which later was invaded by the races relatively of recent origin. Mythological, legendary, and historical evidences, prove this in certain countries, and we have seen that we still find the evidences of this first European race. It has left its trace even in the people of Paris. In Greece, the head of Socrates, the features of which everybody knows, his cranium, certainly, well nigh brachycephalic, is known not to belong to the type which the Greeks derived from Asia. Moreover, how could these people have devised the type of the young faun, which is as wholly idealised in its kind as that of Apollo in his, unless they had before their eyes the models to indicate it?

Two great sources, therefore, have furnished the origin of the European people. But has the first of the two furnished only the homogeneous elements? Were all the men that the Aryans found in Europe entirely alike? Especially were they all brachycephalic, or wholly or more largely mesatocephalic, as are the fossil remains of the men from whom we judge of the rest? Did these last mentioned remain unmixed with the other races? Have they always peacefully occupied the soil on which they have succeeded (at most) to the *tertiary* man, whose existence is still a matter of doubt? Did any invasion reckoning from this actual geological epoch (*i. e.*, the *tertiary*), bring among us new ethnical elements before the first Aryano-Celtic immigration? Was this last preceded everywhere by the allophyllic population? Such are the questions as they present themselves at this time; for each step forward in the path on which we are advancing with such unhoped-for rapidity, gives rise to new problems, resulting from those we have already solved.

Let us remark at once that the preceding questions are wholly distinct from that which we have already examined, namely, (*the primitive European origins*). I previously defined the exact limits, both as to time and space, within which I should confine my remarks. Outside these limits the field for research is entirely free, and already a certain number of results seem to me to be acquired. Thus, for instance, M. Bernard has shown that beyond the primitive race which contented itself with the stone weapons so roughly prepared, the race which built the dolmens formed a little society apart by themselves, clearly circumscribed and wholly distinct from the Aryan stock. He has prepared a table of the migrations of this people which made its appearance at Courland, in the northern part of Russia, (West,) took up its line of march toward the west, and reached the sea, re-ascended as far as Gothebourg, but not much higher, touched at the Orcades and Hebrides, stopped upon the western shores of Great Britain and of France, where it ascended a number of the rivers, remained for a little time in Portugal, and finally lost itself in Africa, in the neighbourhood of Algiers and Constantina. At the period of its setting out, this race was still in the age of stone. In its long travels it passed through the age of bronze, and even entered upon the age of iron.

The crania of this race, even in Sweden, show at least in some of the burial places, that they were almost exclusively dolichocephalic, (Van Duben.) Is this already the Aryan race, but still in its infancy and appearing before it had made the discovery of the metals? A comparative and minute examination of the crania would alone settle this question; but, meanwhile, the considerations to be derived from their stature, would ill accord with the affirmative view of this question. When the Celt and the Aryan of the bronze age arrived in Europe, he is at once distinguished by his tall stature. The same observations apply to the short statured dolichocephalic, found in the long barrows (Thurnam). If this race was an Aryan it was a short statured Aryan, and consequently a race secondary to and different from the Celtic.

Could an allopyllic stock, then, have its dolichocephalic branches? It would not be strange if such were the fact. In this, perhaps, we may find a solution of the difficulties raised by the cranium found at Engis, and also that of Egisheim, which also appears to be of the long type, (dolichocephalic.) In this way, perhaps, we shall find reconciled the contrary opinions maintained by MM. Broca and Pruner-Bey. Do not forget that the two cranial types are found in the Aryan stock, and this in a people which, separated by this characteristic, are in accord, in other respects, relating to their

skin, hair, and language. (The Germans of the north were *dolichocephalic*, and the Germans of the middle states *brachycephalic*.) We cite again, the fact, that the negro stock, which is generally dolichocephalic, has branches that are brachycephalic (Mincopies).

The existence in Europe of an allophyllic dolichocephalic people, would nevertheless add only another type secondary to those which this ancient race already presents. Let us, if you please, leave out of view its fossil representatives, still, perhaps, too few in number to generalise from, and let us take into account only the proofs still existing; let us lay aside the Magyars, whose advent is entirely modern; let us also neglect the Basque-type with the elongated head, for as a rule in this people brachycephaly does not everywhere appear to reach anything near the degree which it presents in the Laplander. This last, in turn, differs from the Esthonian in many characteristics, but notably in those pertaining to the superior maxillary bones; and finally among the Esthonians themselves we establish the existence of two well marked types.

We conclude, therefore, that without leaving this part of Western Europe, which alone has been pretty much explored from the point of view relating to our subject, we have ascertained in the allophyllic race derivative branches almost as numerous as those of the Aryan stock.

It is from the mixture of these elements, so diverse, in a physical point of view, and doubtless no less different in other respects, that the existing European peoples, as a whole, have originated, for we can scarcely take into account the small admixture of Semitic blood which they have received, particularly in the south. Mixed up by wars, invasions, and movements of every sort of which it is not my business to speak, these people have almost all retained, to a very high degree, the stamp of mixed races. The prevailing element, in one or another region, shows itself quite frequently by some characteristic common to the majority of the individuals of the race, *e. g.*, stature; occasionally some trait breaks out in the midst of others which seems to exclude it, (prognathism,) at times also the pure types seem to reappear, thanks to the phenomena of atavism, but the general fact of old and repeated intermixtures is no less evident.

Are we for that reason inferior to our ancestors, and must our civilisation yield to its predecessors? Yes, replies M. de Gobineau. No, we unhesitatingly affirm. Unquestionably mere size, without a well defined purpose in view, has for us few attractions, and we should not erect a pyramid simply to enclose a coffin. But, do we shrink back when a faith-inspiring thought or a noble purpose to be accomplished comes in to prompt our efforts? The existing state of

things shows the contrary. The spire of the cathedral of Strasbourg is but slightly overtopped by the pyramid of Cheops; in cutting through the isthmus of Suez we are doing over the work of the Pharaohs, only on a much larger scale; and in piercing the Alps we are certainly far ahead of everything antiquity dared dream of. Likewise in the domain of arts are we very much below the Greeks, the acknowledged models of all? Perhaps so; but if they have remained our masters in architecture and sculpture, may we not be theirs in music and painting? And what civilisation of the past has approached at all near our works of pure science, those marvels which, happily, accomplish every day the satisfying of our noblest and most disinterested instincts, and which also minister to our wants, our pleasures, or our caprices?

History shows us that it is not given to man to attain at once to all the extremes of his capability. But in submitting to this law, thus far absolute, the modern European, *the hybrid a thousand times crossed from the Allophyllic and the Aryan races*, can, without boasting, regard as well done the part which he has taken in the successive work of generations; he has a right, indeed, to be proud of the manner in which he has performed his task.

Mean Age of Races and Peoples.—In view of the movement which is bringing face to face the most widely separated peoples, and which, every day, is multiplying the means of intercourse, by canals, railroads, and steamboats, it is impossible for us not to foresee that the time is relatively near at hand when the most distant races, after having everywhere become thoroughly intermixed, shall people the entire world with their hybrid progeny. What, then, will be the result to humanity? Will it be degraded or elevated?

To give an intelligent opinion on this question, which forces itself upon us, the mind instinctively turns to those countries where the crossing is already most complete. It studies with anxiety the immediate results, and the impression which is forced upon us is not, it must be confessed, the most encouraging. And from thence come those gloomy forebodings which MM. Gobineau, Perier, and others, have more or less prominently put forth.

But these disheartening prophesies are based upon the postulate, either implied or expressly reduced to a formula, (as in the case of M. Gobineau,) that these mixed races of the future will be incapable of progress. Now, do we find in the past a single fact authorising this hypothesis? Let us recall here our own history, and what France was after the invasion of the barbarians, at which time began those admixtures of races from which the French nation took their origin: let us remember the time of the *trêve de Dieu* and the *quarantaine du*

Roi. Who could anticipate the France of to-day in that desolate country?

Why should the destiny of Mexico and of South America be any way different?

In fact, the majority, at least of civilised peoples, have had their origin only in the midst of mixed races, and M. de Gobineau himself acknowledges it. In fact, each truly new mixture has given birth to a civilisation superior, at least in certain respects, to those which preceded it and from which it took its initiative. In fact, the pure races which we saw come into Europe, arrived there wholly in a state of barbarism, and it was only subsequent to the crossings that the aptitude for development in civilisation appeared. In fact, their immediate heirs, those knights of noble blood who, completely armed, were accustomed to leap on their horses, barbed, like themselves, in iron, had actually no position in society, either morally or intellectually; and consequently, the crossing of the human races appears everywhere to be a cause of progress, producing new forms which mankind invests with the attributes of greatness.

But, evidently, no single crossing is adequate for the accomplishment of this progress, or for the appearance of this new form. Neither the one nor the other is manifest at the outset. For the benefit of those impatient ones who would reduce every thing to a moment of time, I would recall the proofs from the practice of our stock breeders; the experiments so precisely instituted by Girou de Buzareingues, or those recounted by Nott himself. A certain number of generations, a certain proportion of the mixture of the two bloods are necessary for the resultant race to give forth all that is expected of it.

In these experiments with animals, intelligence and artificial selection come in and hasten the final result. In the crossings between human races natural selection alone is in play. Is it surprising, then, that the experiment should require more time? And when the newly incoming swarms of people keep the population constantly in the condition of beginning, is it strange that the result is delayed even still longer? No, it could not be otherwise. Now in almost every case this is precisely what obtains.

But when a small number of individuals of different races find themselves isolated in such a way that the progress of events takes place without interference, and the results of the mixture become evident so much sooner, and when at the same time the phenomena are less complex; we then more readily discern the connection of events. Just these conditions have been realised at Pitcairn, and that is why I attach so great an importance to the example there found.

It is to the general history of the mixture of the human races, what our experiments in the workshop and laboratory are to the great natural phenomena. It affords us an explanation and understanding of its laws.

In 1789, nine sailors of the English ship "Bounty," having mutinied and deserted their commander, established themselves at Pitcairn, with six Tahitians, whom they purposed to make their slaves, and fifteen women, who could hardly be called their wives. So far as concerns antecedents, it was, as we see, conquest with all its abuses ; it was what still too often takes place.

The results were just what they should have been. A war of races broke out. Five whites perished ; the women assassinated the Polynesians. In 1793, there remained at Pitcairn, only four whites, ten Polynesian women, and some children. They lived there in a state of absolute polygamy. Subsequently a quarrel broke out between the four Europeans, and two were slain.

The two remaining Europeans finally profited by the lessons of the past. They lived in peace, and exerted all their efforts to govern the little society born in the midst of the outbreak of all their passions. One of the two soon died of disease, and Adams alone remained to continue the work, having no other guide than a Bible, which had by chance been carried there.

In 1825, when Captain Beechey visited Pitcairn, he found a population of sixty-six persons, remarkable for their beautiful proportions, their muscular power, and extraordinary agility, their keen and quick intelligence ; their earnest desire for instruction, and their moral qualities, of which he narrates a touching instance. Most unquestionably, this society, entirely a mixed race, was superior at least to the very great majority of the elements which had given birth to it. But it reached that point only by passing through its *mean age*.

At Pitcairn, this decisive period has been short. The duration is in proportion to the number of elements which must be eliminated or softened down. In France and Europe it has lasted much longer, because these elements were infinitely more numerous and complex, and because in many respects the work had necessarily to be many times repeated. In America, the period of the invasion of races is still going on. How, then, should these races be fixed, and how could they manifest their true characteristics ?

America, in general, and especially the Spanish and Portuguese settlements therein, are in their full mean age. This fact, evident enough to me, explains why the reproaches made against these people are so well founded. The differences which are seen in other respects between the south and the north, could be easily explained, if this

were the place to engage in that work. What sort of a civilisation will arise out of this immense field of experiment, where all the nations of the earth are mixed, and amalgamated together? It seems presumptuous to attempt even in the most general way, to reply to this question, and yet the past warrants us in casting a glance at the future.

On this point I am happy to agree exactly with M. Maury, when, taking into view the ethnical origin of peoples, he sees civilisation born and developed into greatness by the contact, mixture, and union of races. I am happy to think, as does my colleague and predecessor, M. Serres, who sums up his opinion in these words: "The greater the number of elements entering into the composition of a race the higher its development; . . . the greater the number of special characteristics the longer is its life." These great social facts will nowhere be brought out in so perfect a manner as in America. Wholly differing, then, from those savants whose views I have previously combated, I see in the concourse which all the peoples of the globe are bringing in to the formation of the future American races, a pledge that these races will be more perfect than any of their ancestors. In that fact, there will be on the whole a prime cause of superiority; and as in the past, it will without doubt be manifested in new forms by the very fact of the mixture or crossing.

Moreover, we learn from history that civilisation in the progress of descent from their predecessors never retrogrades in this respect; that while they are perchance weaker on some points they more than make up for it on others. Even the most fleeting civilisations, like those of the Arabs in Spain, have had, so to speak, their specialty, and have made progress forwards. Now no one civilisation will have had for its point of departure a foundation so large as the future American civilisation. Everything, then, tends to the presumption that it will far outstrip us.

Conclusion.—In the course of the lectures delivered at the Museum some twenty years since, and of which a resumé has been published by M. Esquiros, M. Serres insists upon the future result of the crossing of the human races. Firmly admitting the perpetuity of actual characteristic types, he believes in the unification of races. Without going to so great a length, M. Maury thinks that everything tends towards uniformity, and that the time will come when a mere variation in character will take the place of the old diversity of races.

Now, while freely acknowledging there is some truth in the opinions of my eminent colleagues, I cannot go to so great a length as they. Without doubt, in the great movement which has engaged the attentive study of all three of us, the civilised white man plays the most

important part. It is he who everywhere seeks out the inferior races, at one time by force carrying them away with him and compelling them to undertake forced migrations, at another obtruding himself upon them and occupying their own soil, at still another exercising an influence and attraction against which he strives in vain to defend himself, but always mingling his own blood with that of the inferior races, and thereby elevating their position. But the mixed races will differ in proportion as the ethnical elements to which he allies himself differ. One only of the parties will be elevated out of the distance which before separated them, and a common element will be established between them in relations where none previously existed.

In addition to this prime cause, which will tend by itself to maintain a distinction of races, even were they placed in identical circumstances, we must besides add the influence of other causes. So long as the earth remains what it is, so long as there shall be an equator and poles, isles and continents, an old and a new world, so long as the conditions of existence shall remain as varied as we now see, so long will distinct races exist, and continue to form themselves, and that, too, exclusive of the phenomena of crossing. Only, and here is the point, it is principally the white race which emigrates and populates anew other countries. Consequently these races will be more nearly allied than those that we found occupying their places; for these last were the result of a series of operations, continuing for centuries, and which will never again be repeated.

The civilised white man will not be unmindful of the paths which he has opened up to himself. Were he obliged to remain where he is for lack of means of transportation, he would still pursue his course, he would none the less continue to extend his migrations. These relations between populations established under the most varied means, would of necessity bring about marriages. His aptitude for acclimation would be enlarged. The phenomena which now obtain almost alone in the case of the Jewish race, would become universal. The races of the future will receive at birth an aptitude for sustaining the operation of the most varied influences; they will become in advance, as it were, either wholly or partially acclimated.

Thus, by virtue of events so linked together and of a self-imposed necessity, the future human races will be largely renovated with an infusion of white blood, that is to say, with the ethnological elements which thus far have carried to its highest degree the development of human intelligence. Consequently these races will become more intimately related to each other, but they will not for all that be either alike or equal. The same causes which have been at work in producing diversities among the members of the great human family,

will none the less continue to be active. There will always be dissimilar races, there will always be races superior and races inferior. But on the whole, humanity will be advanced, its means of control over natural phenomena will be enlarged; at the same time its power of resistance to those events which thus far have sometimes controlled it, will be increased. Nothing, then, warrants us in thinking that the civilisations of the future can in any way be inferior to those of the present day, but on the contrary we even go so far as to predict that in some direction yet unknown, they will far outstrip them.

THE NEGRO AS A SOLDIER.*

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ETHNOGRAPHICAL causes have always been active in the production of wars, and the existence of slavery was undoubtedly the ultimate cause in the war of the Rebellion. Yet, though it involved the deepest problems of race, it was not in itself a war of races. It was a struggle between two geographical sections of the same race and nation as to the just status of a foreign element which had become domiciliated among us by the act of our ancestors and which, in itself powerless, had by mere bulk and magnitude acquired a controlling importance in national affairs. During this struggle the negro remained passive. His ideas of the struggle were not revolutionary, but religious. He believed and waited, his simple mind filled with the grand metaphors of Holy Writ, and his doubts all silenced by an implicit faith that in the Lord's good time his deliverance would come. When it was decided by Government to employ him as a soldier, he cheerfully enlisted as he found opportunity. But when, by accident of locality, he was unable to reach our lines, he remained a faithful and quiet slave. In no instance did he assume leadership, in no instance did he organise to strike a blow for his own liberty. Yet, in all instances, he was patiently loyal to his own race and to the cause of the Union.

This passivity is a moral element which might well create many doubts as to his efficiency as a soldier. Aside from the intemperate

* We are indebted to Dr. W. A. Hammond, late Surgeon-General U. S. Army, for a copy of this valuable report to the U. S. Sanitary Commission.

opposition of negro-haters, many of his calmer friends could only look upon the experiment as one involving serious risks of failure. Had he the physique to endure hardship? Could he acquire the manual of arms and perfect himself in tactics? Had he the necessary physical courage? Would he not, when his savage blood was up in the fever-heat of battle, entail disgrace upon our cause by acts of outrage? Was not the profession of the soldier in its essence too noble and manly for this pariah of the land? All thinking minds acknowledged these doubts, and with many they became at once convictions.

The scepticisms entertained as to the capacity of the negro for the duties of a soldier found voice even in the Acts of Congress authorising his enrolment. The first Act only impliedly makes him a soldier. In the Act of Congress approved July 17th, 1862, we find the following:—

“SEC. II.—*And be it further enacted*: That the President of the United States be authorised to employ as many persons of African descent as he may deem necessary and proper for the suppression of the Rebellion, and, for this purpose, he may *organise and use them in such manner*, as he may judge best for the public welfare.”

A little later another Act was passed exhibiting the same spirit of hesitancy. We quote:—

“SEC. XII.—*And be it further enacted*: That the President be and he is hereby authorised to receive into the service of the United States, for the purpose of constructing intrenchments, or performing camp service or any other labour, *or any military or naval service for which they may be found competent*, persons of African descent, and such persons may be enrolled and organised under such regulations not inconsistent with the Constitution and Laws, as the President may prescribe.”

Even here, the name of soldier is not employed, and the precedence given to his employment as a labourer expressively indicates the hesitation felt by Congress and the people. And with a just sense that in thus employing the negro they opened the way to questions of deepest moment that might lie beyond and incurred obligations which would change the political status of four millions of human beings, they enacted another section conferring freedom on the negro, his wife, his mother and his children, who should serve in our armies, provided always that the master or owner of the negro should have enlisted in the service of, or in some way have aided and abetted the cause of the Rebellion.

Men looked at this startling innovation with different eyes. The earnest believer in a common humanity rejoiced; the careful statesman hesitated; the prejudiced denounced; and the pure scientist

looked upon it as a grand experiment on a scale of such magnitude as to render its results decisive. Every step, therefore, of the enlistment of 180,000 negroes was watched, by friend and foe, with a lively interest.

Enlistments of negroes, however, had begun before the passage of the Act of July 17th, 1862. The first black troops raised, were recruited in Kansas—the Waterloo of slavery,—by Col. James Williams, and his regiment for a long time was known as the “First Kansas Coloured Volunteers,” or, more familiarly, as the “First Nigger.” Colonel Williams acted without sanction and, of course, under difficulties that would have crushed a man less indomitable. How he fed or clothed his men is one of the unsolved mysteries. How he disciplined them is known. In one case, three members of one company, intoxicated by their new position, committed an infamous outrage. Twenty-four hours later, they had been tried, convicted and shot, the firing detail being made from their comrades. The subsequent history of this regiment is one of active service, of hard fighting and of heroic courage.

The first grand movement in the enlistment of negroes, was in the organisation of the *Corps d’Afrique* at New Orleans, and immediately after that coloured organisation became general in all the Slave States occupied by our forces. Some regiments were also raised at the North, the 54th Massachusetts being a notable example. We believe that, with the exception of that regiment, all the negro troops were taken up as United States volunteers, including the two regiments raised in Kansas and known, up to the spring of 1865, as the First and Second Kansas Coloured Infantry. But very many coloured troops were credited to the quotas of Northern States. Counties and cities sent recruiting agents to the South, and by paying bounties, induced negroes to credit themselves to New York, Boston or Philadelphia, as the case might be.

It was at first proposed to confine the use of these troops to the holding of sea coast and other fortifications, especially in malarial districts, with the idea that they were not liable to the diseases peculiar to those localities. As our experience enlarged, they were employed in campaigns, battles, and sieges, and were in many cases assigned to tasks requiring all the steadiness of veterans.

The conclusions which we are now justified in forming as to the value of the negro as a soldier affect his physique, his capacity to learn tactics, his providence or improvidence in the care and cooking of his food, his powers of resistance to hunger and fatigue, the diseases peculiar to him, if any, and those to which he is most usually subject, his morale, including his courage, cheerfulness, and obedience, and finally his comparative intellectuality.

Aptitude for Drill. The well known imitative faculty of the negro, together with his natural fondness for rhythmical movement, are elements of character which were promptly improved by the drill-officers by whom the recruits were instructed. The habit of obedience, inculcated by the daily life of the slave was also valuable, and it was soon found that, in the drill of the soldier, the negro lacked no essential. In cleanliness, however, there was a deficiency, though that was overcome in those instances where the discipline was rigid. Some of the regiments of the *Corps d'Afrique*, organised at New Orleans, were models of soldierly neatness and precision ; while others, less carefully officered, were slovenly and careless.

Capacity for Marching. The large, flat, inelastic foot of the negro—almost splay-footed—was at first considered an objection ; but experience has not sustained the idea. I have known a command of about 1,500 negroes to march 78 miles in 76 hours—part of the distance over a rough mountainous road—with remarkable ease and without increasing the sick-list, except from blistered feet. The general experience of army officers has decided that the negro marches as well as the majority of troops. His large joints and projecting apophyses of bone give a strong leverage to the muscles attached to or inserted in them. Yet in unfavourable circumstances there is reason to suppose that he fails to endure prolonged fatigue as well as the white man.

Endurance of Fatigue and Hunger. In response to inquiries addressed by the New Orleans Agency of the Sanitary Commission, Surgeon Blackwell, 81st U.S.C.T., expresses the opinion that the negro bears fatigue better than the white man. Other officers, among them Surgeon Humphreys of the 55th U.S.C.T. and Surgeon F. E. Piquette, in charge of the U.S.A. General Hospital for Coloured Troops at New Orleans, state with equal positiveness, that he is inferior in endurance ; that “he is *at present*, too animal to have moral courage or endurance.” After full discussion with all the leading surgeons in charge of negro troops in Louisiana and Alabama, Dr. Owen M. Long reports to the commission that, “the coloured soldier does not endure fatigue as well and as long as the white, but he can endure hunger for a much longer period.” Dr. Long, in speaking of cases of exposure and hardships, says :— “In this instance, the *morale* of the white man steps in and often aids him in overcoming the situation.”

Such I believe to be the general opinion of observers. The negro loses the impulse of his natural gaiety, and becomes bitter and despondent ; though, if well-fed, as in the instance of the severe march mentioned above, he sustains himself well.

Powers of Digestion and Assimilation. The negro is a heavy feeder. His plantation ration was usually confined to bacon and corn meal, eked out by such vegetables and poultry as he was allowed to raise, or such game as could be found in stream or forest. In the army he speedily adapted himself to the ration, was uniformly fond of "hard tack" and preferred bacon to beef. Even in the climate of the Lower Mississippi the tropical origin of the negro shows itself in some difficulty in maintaining animal heat. Hence, probably, their instinctive fondness for fat bacon, opossum, and coon. All our reports concur, practically, in the opinion that the negro, under a fair ration, has good digestive powers and manifests no peculiar tendency to diseases of the alimentary tract.

Without being especially provident in the care of his ration, he is a very fair forager, and has a long list of foods not relished by the white soldier. He is also a liberal patron of the sutler. Negro regiments, in my experience, usually consumed all their ration, and as much more as they could conveniently obtain.

Immunity from, or Liability to, certain Diseases. One of the strongest arguments used in favour of the employment of negro troops was their supposed immunity from malarial forms of disease. There was a wide-spread belief in this idea, which has not been sustained by experience. We cannot better express our own convictions, resting on a very considerable observation, than by quoting somewhat at length from reports made to the commission by Dr. Ira Russell, who has given this subject the most careful study at St. Louis, at New Orleans, and in Virginia. Dr. Russell says, in a report on the coloured hospitals of Richmond, Norfolk, etc., that he found the opinion of numerous surgeons whom he consulted to be as follows:—

"First. The negro bears injuries and recovers from wounds quite as well as the white man."

"Second. Gangrene is of rare occurrence."

"Third. Malarial, typhoid, and bilious fevers do not occur more frequently or terminate more fatally than among the white race."

"Fourth. Pneumonia, pleuro-pneumonia, and measles are more frequent and fatal than among the white race."

Two of the surgeons, Drs. Maillard and Ela, have had a good deal of experience among the coloured population in the contraband hospitals at Portsmouth, Norfolk, and on the adjacent plantations. In reply to the query, "To what diseases is the negro more subject than the white man?" they replied, without hesitation, "To pneumonia and pulmonary inflammations." * * * * * "The system of slavery was calculated, in various ways, to stimulate child-bearing. The mother had no responsibility—no care for the support

of herself or her children. Breeding enhanced her value—to be a *cheap* negro was a disgrace. But, while the slave-holder understood how to stimulate child-bearing, his method of rearing children was very bad. The importance of cleanliness, good food, warm clothing, and proper shelter was but indifferently understood; hence, many of these children grew up with impaired constitution, affected with scrofula and tuberculosis. Dr. Seymour thinks that eruptive diseases, such as small pox, measles, and scarlatina, are severe with coloured children, and many die from pulmonary complications.”

There is, or was, among inexperienced medical officers, a belief that negroes are not fully amenable to remedies. Sudden and accountable deaths frequently occurred in the hospitals, and came to be considered a negro peculiarity. In some cases the superstition of “fetichism” was responsible for this. The patient would believe himself possessed with a devil, or to have been subjected to the baleful influence of the unholy charms of some witch; he thus became hopeless, despondent, and apathetic. Upon these points we again quote from Dr. Russell:—

“I have given careful attention to the symptoms and pathology of disease as exhibited in the negro, and as modified by his peculiarities of constitution, habits and modes of life. I have also made careful inquiries of surgeons on duty in negro regiments and in the negro hospitals at St. Louis, Mo., Nashville, Tenn., Washington, D. C., Alexandria, Richmond, and Hampton, Va.”

“All the intelligent surgeons agree with me that a thorough knowledge of the habits and idiosyncrasies of the negro are of the utmost importance in order to understand and successfully treat his diseases. Much of the lack of success in treating disease among this unfortunate class of our population is undoubtedly due to ignorance of such facts. Two hundred years of servitude, the implicit obedience required, the exemption from all care and anxiety to provide for the future, the extinguishment of all hope of improvement in his civil or social relations, has produced marked physical and moral effects. Self-reliance and exercise of the will have never been cultivated or formed any part of his education. His highest ideal of enjoyment has consisted in freedom from toil and the gratification of the lower animal instincts.”

After alluding to various other and obvious hygienic causes affecting the negro, Dr. Russell says:—

“When sick, he will take neither food nor medicine, unless administered by some other person. Many sick negroes have died in consequence of this neglect, much to the astonishment of the physician, who had faithfully prescribed all that was needed of both. He is superstitious, and believes in charms and diabolical agencies, and often imagines that he is the victim of some supernatural influence, from which it is impossible to extricate himself. When under the

influence of this hallucination, he becomes indifferent, despondent, and gives up in utter despair, dying without apparent cause, leaving the impression on the physician's mind of lack of vital power, when, if the case had been thoroughly understood, the explanation would have been found in the mysterious influences of the mind working upon the body. But little reliance can be placed on the subjective symptoms as given by the negro. His ignorance of terms, and his obscure and indefinite mode of describing sensations only serve to confuse and perplex. Trivial symptoms are greatly magnified, while grave ones are entirely overlooked. The intensity of physical suffering is his measure of danger. The intelligent physician soon learns that he must treat a negro as he would a child. At a glance, he knows that the pale ashen colour of the skin indicates disease, while the sleek, glossy hue is the sure sign of health. He gives but little attention to the symptoms described by the patient, but resorts at once to the physical signs. When such precautions are taken and careful investigation made, but little difficulty will be experienced in properly diagnosing the diseases of the negro."

It will be seen, we think, that the conditions of the negro thus discussed, which certainly impair his efficiency or his durability as a soldier, are not intrinsic to his race, but are to a great extent educational, and may be expected to disappear under the energising influences of freedom and the teacher. Fortunately, even this expectation has already been tested and proved to be correct by comparison between the free negro recruits from the North and the grossly ignorant slaves enlisted from the plantations of the South. The difference, says Dr. Russell, consists in the greater dependence of the recently enlisted enslaved upon the care of their officers and indifference to personal necessities and comforts. Surgeon-General Dale, of Massachusetts remarks :—

"The difference between the coloured volunteers recruited North and coloured regiments raised South was very great and more strongly marked than any characterising white soldiers as compared with black. The blacks born and recruited South having just emerged from the condition of servitude imposed upon them since birth are far more dependent than the coloured regiments recruited North, showing that the further this race has been removed from the depressing influences of slavery, the closer has become their approximation to the whites in their physical development and capacity for becoming enduring soldiers."

It was also observed that northern negroes when removed to the South presented the same liability to malarial disease that attended the whites. But in the opinion of the writer, this was also true of those negroes raised at the South. Dr. J. C. Nott, of Mobile, denies that they have any exemption from malarial disease. In my own experience, the ratio of malarial and typo-malarial disease was about

the same in all three classes, whites, northern negroes, and southern negroes. This corresponds also with the facts reported by African travellers, Barth, Andersen, and Reade, who speak of great mortality from intermittent and bilious fevers of the Africans in their native jungles. The conclusion reached by Forry, Nott, Blodgett, and Drake, that "there is no such thing as acclimatation to malaria," finds no exception in the negro. This is the uniform testimony of all surgeons in charge of coloured troops who have reported to this Commission.

The weight of evidence seems to place them upon the same level as the white, in regard to liability to malarial disease.

In *pulmonary diseases* we find the only excessive cause of mortality in the negro which seems to be inherent to his constitution. We have already spoken of the frequency of eruptive diseases among negroes, but this is due, evidently, to neglect of vaccination and to the protection against measles and scarlatina, afforded them by the isolated life of the plantation and the ease with which any particular focus of contagious disease could be quarantined under the social system of the South. And the fatality of these diseases among negroes is almost uniformly ascribed to their complication with pneumonic affections, intercurrent or secondary.

While it must be admitted that temporary causes had much to do with the frequency of lung diseases among negroes, it will still be found that they are vastly more liable to this source of mortality than the whites. In the process of escaping from his master to reach our lines, the slave was often exposed to great hardships, and in the transition period between his first day of freedom and his final enrolment as a soldier, these exposures were too often continued at a vast expense of life; yet it was found beyond, that when fairly enlisted, clothed and fed, and subjected to the same methods of life as the white soldier, he still exhibited a far greater ratio of death from pulmonic disease. On this point we quote *in extenso* from the valuable researches of Dr. Russell:—

"From the records of five hundred autopsies (four hundred and seventy-two of which were of coloured men) made at Benton Barracks, Mo.; Wilson Hospital, Nashville, Tenn., and L'Ouverture Hospital, Alexandria, Va., it appears that pneumonia and pleuro-pneumonia were found to exist, and were usually the cause of death, in four hundred and six out of the four hundred and seventy-two cases. Tuberculosis existed in thirty-seven cases only. All other diseases eight cases."

"In the Army of the Potomac, and in the hospitals at Alexandria and Fortress Monroe, the coloured troops suffered much less from pneumonia than in the west; and the same is also true of the white troops. Even previous to the war, the old army suffered much more

from it in the valley of the Mississippi than on the Atlantic coast. Especially was this the case at Jefferson Barracks, near St. Louis, Mo."

We are compelled, then, to believe that, independent of external causes, the negro is far more susceptible to pulmonary disease than the white. The physiological cause of this cannot, perhaps, be demonstrated; but great weight is due to the hypothesis that he has a tropical, or smaller, lung. In all, or nearly all, the autopsies we have quoted, the weights of the lungs were taken; but those weights were so much invalidated by the presence of various forms of solidification in the organ, that we are unable to use them in this connection. A careful series of weights of normal lung, to contrast with weights of an equal number of whites, is a great desideratum. It should be re-inforced by measurements and the volume and the expansibility of the living thorax. At present we are only able to suggest that, if the Arctic lung requires a capacity equal to the absorption of oxygen enough to convert into carbonic acid gas forty-five or fifty ounces of carbon daily, in order to maintain the animal heat in those cold regions, it would be in accordance with the economy of nature to suppose that the oxygen capacity of a tropical lung would be smaller than the Arctic, in the same ratio as the amount of carbon required to maintain animal heat in the sultry climates of the Equator. But this is not yet proven. The comparative frequency of tuberculosis in the two races, is by no means understood. Most surgeons in contact with the negro, are of opinion that he, especially the mulatto, is predisposed to consumption. This opinion is pretty nearly universal among them, and yet Dr. Russell, from his own studies, doubts the truth of the theory. Dr. Harris, of Cleveland, Ohio, himself a negro, and a close student of his race, is emphatic in the opinion, that the admixture of races does not impair physical endurance or fecundity, but, on the contrary, promotes both. Against these opinions rests a pretty general conviction that tuberculosis is a scourge of the negro, especially the mulatto, and that the fecundity of the latter is not equal to that of pure bloods. Common observation shows that the number of quadroons is much more numerous than that of "octo-rooms," and that the number of mulattos is much greater than that of quadroons. If there were no impediment of fecundity, the reverse would obtain. But this study lacks all the data which would ensure an exact and intelligent opinion.

Intellectual capacity. The negro, both by nature and education, is social and gregarious. His fondness for companionship is notorious and adds much to his adaptability to the crowded life of the camp. The negro encampment is always a cheerful and chatty place, en-

livened by music, dance, and sport. Nostalgia, even in the married soldier, is almost unknown, and, when he is well and well fed, I have never seen a case.

His intellectual acuteness has been very much blunted by centuries of ignorance and servitude, and it is now impossible to define his relative position—as a native and uncontaminated being—in the scale of races. His history in the land of his origin is one of continuous barbarism, with occasional wild outbursts of the brute element. On this continent, we behold a patient, long-suffering, religious man, who, under circumstances of great provocation and frequent opportunities, rarely commits those graver and more beastly crimes which disgrace human nature. His record during the war of rebellion is wonderful in its gentleness and Christian forgiveness. He has “waited patient on the Lord,” and not until the prison gates were thrown open did he attempt to come out into the light of freedom. It is with him as we find him now, and not with his barbarous ancestry, with him under the dispensation of Christ, and not under the curse of Ham—that we have to deal in this era.

It would be grossly unfair to subject the negro to a comparison of intellectual capacity based on his present manifestations of mental acuteness. In the Slave states he has been held in ignorance by law; in the free States subjected to a constant sense of inferiority. All the paths of competition have been barred against him, and, though in the North he has in occasional instances raised himself to prominence in intellectual combat, it has been over obstacles which might daunt the most enterprising.

We do not expect from the besotted peasant of feudalism any vindication of his membership in a superior race. How few are the cases in which the agricultural peasant of Russia, France, or even England, has achieved intellectual distinction! From our own feudalism, we can anticipate no different result. We must turn, then, from the illiterate—almost inchoate—intellect of the feudalised negro, undeveloped and uncomprehended as it is, to some other means of comparison. However deficient it may be, it is nearer the truth than it would be to demand energy, enterprise, and political sagacity of one who has not yet made acquaintance with the spelling-book.

Three modes of ascertaining the superiority or inferiority of races have been devised, which have reference only to physical facts, and depend for their correctness solely on the honesty and accuracy of the observer. One of these—that by external measurements of the cranium—is in itself essentially faulty, in that it makes no allowance for the thickness of the skull, though it has developed the fact that the Germans use larger hats than the Anglo-Americans of the

Northern States; these, larger hats than the same race in the Southern States; and these, again, very much larger than those worn by the Spanish-Americans of New Mexico, etc. The English infantry hat sent to the coloured West India troops was found much too large.

A second means of measuring intellectuality rests, like the former, on the size of the brain, and is based on the supposition that there is a direct ratio, between the mental and the cubic capacity of the cerebral mass. Prof. Samuel George Morton, the distinguished craniologist, has taken the internal measurements of more than six-hundred skulls, by filling them with peas or shot, through the foramen magnum, and then measuring the peas or shot by the usual method. His plan is ingenious, and only lacks an accurate knowledge of the race represented by the skull and a far greater number of observations to have a decided practical value.

The third plan is to ascertain the weight of the brain by post-mortem examinations, and is, *per se*, the more reliable.

All these measurements presuppose that the size and weight of the brain is the measure of its intellectuality—a theory probably correct in the main. The objections are these: The mental capacity of a brain probably depends upon its relative portion of grey substance; and, in two brains, of exactly equal weight and measurement, these may differ materially. Again, the distribution of the volume of a brain, whether in the anterior or posterior regions of the skull, may materially control its intellectuality. But all analogies and contrasts go to prove that, as a rule, the size of the brain has much to do with its mental power. Daniel Webster's gigantic head contained 122 cubic inches of brain; the Hottentot and the Australian have only 75 cubic inches. The Toltecan Indian, now perished from the face of the earth, had 77 cubic inches; his conqueror, the barbarous North American, had 84 cubic inches.

For the sake of comparison we give, succinctly, the measurements in cubic inches as established by Morton:

	Mean. Cub. ins.
The Teutonic family, including English, Germans, and Americans (30 crania), has	92
The Pelasgic, Celtic, Semitic, etc., have	88
The Malays, Chinese, Hindostanees, and Egyptians	83
The American Tottecan Indian	77
The American barbarous Indian (161 crania)	84
The native African Negro (62 crania)	83
The American Negro (12 crania)	82
Hottentots and Australians	75

In contrasting the important races we find that the conquering Teutonic family outnumbers all the rest; that, by a singular parallelism, the conquerors (barbarous Indians) who preceded us on this

continent had seven inches the advantage over the annihilated Toltecs, and that the now perishing Indian has eight inches less of brain than his conqueror, the Teuton. And, not to be reconciled with the theory of a direct ratio between size and intellect, is the strange fact, that the Totecan, the semi-civilised Indian, who built the mounds of the West and the now buried cities of Mexico and Central America, was driven out by a conqueror who, with larger brain, has never manifested any tendencies toward civilisation.

The third method of estimating intellectuality by material conditions is, by ascertaining the weight of the brain in different races. Up to the present war the number of brains carefully weighed by anatomists was small, nor had any attempt been made to educe any difference that might be assigned to race. I have carefully collated all the records of weights accessible, and find, in all, 278 brains of white Europeans, mostly English and German, and given on the authority of Clendenning, Sims, Tiedemann and Reid. These tables give the mean weight of the white European brain at $49\frac{1}{2}$ ounces avoirdupois; the greatest weight given being 65 oz., and the smallest, 34 oz.

ETHNOGRAPHICAL TABLE,

Derived from 405 Autopsies of White and Negro Brains. Made under the direction of Surgeon Ira Russell, 11th Massachusetts Volunteers.

	Number of Autopsies.	Grade of Colour.	Average weight of Brain.	Maximum weight of Brain.	Minimum weight of Brain.	Brains, 60 ounces and over.	Brains, 55 and under 60 ounces.	Brains, 50 and under 55 ounces.	Brains, 45 and under 50 ounces.	Brains, 40 and under 45 ounces.	Brains, 35 and under 40 ounces.	Brains less than 35 ounces.
	24	White.	oz. 52.06	oz. 64	oz. 44 $\frac{3}{4}$	1	4	11	7	1	...	...
	25	"	49.05	61	40	1	...	10	12	2	...	...
	47	"	47.07	57	37 $\frac{3}{4}$	...	2	13	19	12	1	...
	51	"	46.54	59	38 $\frac{1}{2}$	...	2	10	22	11	6	...
	95	"	46.16	57	34 $\frac{1}{2}$	...	1	15	50	21	7	1
	22	"	45.18	50 $\frac{1}{2}$	40	...	...	3	10	9	...	...
	141	Black.	46.96	56	35 $\frac{3}{4}$	...	5	42	51	38	3	...
	405	...	...	...	...	2	14	104	171	94	17	1
Autopsies of Clendenning, Sims, Reid, and Tiedemann,	278	Whites, collated from various sources,	49 $\frac{1}{2}$	65	34	7	28	99	97	39	7	1

Fortunately, in the same series of autopsies from which we have quoted in our statement as to the frequency of diseases of the lung,

we find the weight of the brain given in 405 cases, of which 24 were white and 381 were black. This number is larger than that of all the other brain-weights heretofore published, and is sufficient for satisfactory generalisation. It has, moreover, a special value in giving the grade of colour, whether black or mulatto, &c. The labour of this great number of autopsies was performed under the direction of Surgeon Ira Russell. The mode of classification has suggested itself to the writer.

The following laws would appear to obtain in the above table.

1st. The standard weight of the negro brain is over five ounces less than that of the white.

2d. *Slight* intermixtures of white blood diminish the negro brain from its normal standard; but, when the infusion of white blood amounts to one-half (mulatto), it determines a positive increase in the negro brain, which in the quadroon is only three ounces below the white standard.

3d. The percentage of exceptionally small brains is largest among negroes having but a small proportion of white blood.

The weights given in the table are much larger than those given by European anatomists, so far as the white race is concerned. Yet certain correspondences induce us to believe that such a difference actually exists and would be verified by a more extended research. In the vital statistics of this work the weight of the American soldier is found to be $5\frac{1}{3}$ pounds more than that of the French soldier, and 18 lbs more than that of the average English recruit of the age of twenty-one years. Again, there is a curious confirmation of Morton's measurements of the internal capacity in cubic inches of the human cranium. If, as he states, the standard capacity of the Teutonic cranium is 92 cubic inches, and that of the American negro 82 cubic inches, then, to prove this relationship, the white brain weighing 52 ounces, the negro brain should weigh just 46.40 ounces. It actually weighs 46.96 ounces. This is founded on the American measurements only. If we group together the whole mass of weights of whites, foreign and American, we shall have 302 brains of whites, average weight 49.7 ounces. Comparing this with the weight of 141 pure negro brains we find a difference of 2.74 ounces.

Supposing the matter of weight to be the essential condition of intellectuality, the average white has a competitive advantage over the average black of $5\frac{1}{2}$ per cent.; or, taking the 24 brains of white Americans as the standard of comparison, the competitive advantage of the white is $9\frac{1}{2}$ per cent.

Two important questions present themselves in this connection.—

1st. Morton's measurements seem to show that during two centuries

of servitude the negro brain, if it has not diminished in size, has not increased under the influences of slavery. Therefore the crucial experiment of the effect of freedom and education has only just begun. We cannot judge the ultimate capacity of the negro from that which he has thus far manifested. And 2d, so far as the 24 white brains enumerated can prove anything, they show that the American is heavier and larger than the European brain. If *it* has enlarged under our institutions, why may not the negro brain, subjected to new and invigorating influences, also increase its size?

The number of white brains weighed is too small for generalisation. It is simply a suggestion, not a scientific fact. To test it we must look to other conditions and inquire how far the climate and policy of the United States have affected or changed other and easily recognisable physical forms of man. The American is the child of Europe. Other things being equal, we should expect him to be a mere repetition of the European.

But there are evidences that the American, in founding a new nationality, has also established a new type of manhood. Of nearly 26,000 recruits from the New England and North Western States, Mr. Elliott informs us that the mean height was 5 feet 8½ inches. Of 27,853 recruits to the British army at home in 1860 the average height was 5 feet 6½ inches. The average height of the French army, for a series of years, was 5 feet 5¾ inches. Here, then, we find the American soldier is the tallest of the three, and so far as we can examine weights, we find him the heaviest, being 5½ pounds heavier than the French and 18 pounds heavier than the British soldier. In fine, there seems to be some reason to believe that the human brain, in the case of whites, has been increased in size by its transplantation to this continent, while in the case of blacks it has made no progress, but has, perhaps, deteriorated under the influences of slavery.

As between the two races, the problem is: Does the large brain by its own impulses create education, civilisation and refinement, or do education, civilisation and refinement create the large brain? This problem might be solved by a series of researches in the weight of brain of the poor whites of the south, known as "sand hillers," "low-down people," or "crackers." With them civilisation has retrograded. They came of a good stock originally, but have degenerated into an idle, ignorant and physically and mentally degraded people. Their general aspect would indicate small brains. If they are small it is due to the absence of educational influences.

In the present state of science, we can only refer to general opinion, which leans to the belief that it is within the power of educational causes to modify the form and size of the human brain to a consider-

able extent, and that the competitive success of the freedmen of this country rests upon the effort that may be devoted to their mental and moral elevation. They have already the same cranial capacity with the Hindostanees, who have developed a high civilisation, a profound philosophy and a rational religion.

We have thus stated, as elaborately as our limits will permit, the differences which exist between the black and white races. It will be seen that, for the purposes of the soldier, he has all the physical characteristics required, that his temperament adapts him to camp life and his morale conduces to his discipline. He is also brave and steady in action. His only disqualifications are found in his greater liability to pulmonary and exanthematous diseases and in the lack of education—perhaps of native intellect—that forbids his attainment to the rank of a commissioned officer. Neither of these objections are of sufficient moment to throw him out of the lists, and, in all subsequent wars, this country will rely largely upon its negro population as a part of its military power.

THE RACE QUESTION IN IRELAND.

By J. W. JACKSON, Esq., F.A.S.L.

THE day for the practical application of Anthropology has not yet arrived. Statesmen, although it is their business to govern men, know nothing of the science of man. And philosophers, although they profess to study human nature, prefer doing so in an abstract way, that ignores diversities of type and character as something beneath the dignity of a mind capable of a logical deduction of conclusions from the first principles of things. The result of this is, that whether in the executive or legislative department of government, we proceed on groundless assumptions and hastily formulated fallacies, which, in so far as they have any recognisable basis, seem to rest on the theological dogma of monogenism on the one hand and on the ultra-republican affirmation of racial equality on the other. As might be supposed, the effect of such grave misapprehension is often most lamentable. With an oceanic empire, that in its various settlements extends from the arctic almost to the antarctic circle, and which embraces not only European, but also Asiatic, African, and American peoples of almost every race, from the oceanic Negro to the high

caste Caucasian, and in every grade of culture, from the Indian hunter to the Oxford professor. Britain, in her regnant and imperial capacity, knows nothing of race. Practically, of course, she is compelled to recognise the difference between an Andaman islander and a Hindu Brahman, and Australian aborigine and a European settler, but she does so grudgingly, and with a reserved conviction that it is only a temporary arrangement, that, by the help of bibles and missionaries, to say nothing of omnipotent acts of parliament, will some day cease and give place to a millennial equality among all the sons of men ! This notion of racial equality was the underlying element of error in the public mind, which permitted of so monstrous a perversion of the forms of justice, as that involved in the prosecution of Governor Eyre. Were not the negroes of Jamaica "brothers," albeit in ebony, and had they not been liberated by parliamentary enactment and hard British cash, and were they not "converted" and capable of speaking English, after a fashion ? What more, then, was needed to prove that, whether as loyal subjects or armed insurgents, their treatment, to the minutest particular, should resemble that of our own or any other European people, under similar circumstances ? This was the arch-fallacy that tinged alike the platform oratory of the missionary meeting and the graver address of the Lord Chief Justice. Now, while such misconceptions are so generally prevalent, our present governmental mistakes, whether in legislation or administration, are unavoidable. The only cure for such errors, is knowledge—at least, to the extent of admitting racial diversity, mental and corporeal.

Now, although the misapprehensions to which we have been alluding are most absurd, if not most mischievous, where the diversity of type is greatest, as for example between Negroes and Caucasians, yet the error in principle is the same ; if, misled by false assumptions of racial equality, we proceed to legislate for well marked varieties of the same great division as if they were identical in endowment and proclivity, in capacity and requirement. We know that this is the tendency of modern legislation, which in this matter is lamentably in arrear of scientific knowledge. We do not blame any one for such a state of things, which is to a large extent unavoidable. We are still in the midway course of a revolutionary movement, which, beginning with theology and ecclesiastics in the fifteenth and sixteenth centuries, is now ultimating itself in the political commotion and social change of the eighteenth and nineteenth century. As a reaction against hierarchical and feudal despotism, such a movement could not fail to emphasise equality, to the extent even of ignoring racial diversity. Moreover, this movement is still headed by *doctrinaires*, men who unwisely begin with an assumption and then conscientiously end in a

fallacy. Whether from mental, constitutional, or educational impressions, these men, however otherwise gifted, seem incapable of appreciating facts when opposed to their favourite ideas. Hence, they overlook the obvious organic specialities of the different types of mankind, as of no account from their standpoint, and both speak and act as if they disbelieved in any harmonic relation between the mental constitution and organic structure of a people. They believe in art rather than nature, and fancy that by time and education they can make anything of any race. It is, of course, logically correct for such persons to put unlimited faith in institutions. Regarding laws and usages as the cause rather than the effect of national character, they, without any misgiving, attempt the transference of institutions from one race to another, however great the gulph between them—and then wonder that nature does not second their experiments.

Some of these have been instituted on rather an extensive scale during the present century. The whole of the Spanish possessions on the continent of America have been made the subject matter of their operation. Their racial equality and representative institutions have been on their trial for fully two generations, not as yet with the most satisfactory results. Knox foretold their failure thirty years ago, and nothing has since occurred to falsify his prediction; the only undeniable tendency of things thus far, being towards a re-emergence of the Indian type in strict accordance with the laws of race, as generally understood by Anthropologists. Nothing deterred, however, by this, England attempted the same thing in her West India Islands, where, as there are no aborigines, the only perceptible effect thus far, of this vast and expensive scheme of philanthropy, has been a rather effective development of negroid proclivity to indolence and barbarism; and then, as an affair almost of yesterday, we had the civil war in the States eventuating in the liberation of the negro throughout the South; with what effect, the future alone can decide; although science rather inclines to his ultimate extinction, and perhaps supercession by a superior race, like that of the Chinese Coolie, whose organic specialities also ally him more nearly to the aboriginal Indian type.

But these were experiments with very unfavourable material, where complete fusion, even if ultimately attainable, could not be rationally expected for centuries. But it is otherwise with races more nearly allied, as for example any of the so-called Aryan divisions of Europe. These have been so often commingled by the agency of conquest and colonisation, that it would be difficult to say what two of them will not amalgamate, to the extent at least of an ultimate absorption of one of the types, generally, if not always, the intrusive. Of this, the Goth in Spain, the Visigoth in Italy, and the Frank in Gaul are

illustrious instances. Britain is still debateable ground in this matter, the believers in area regarding it as essentially Celtic, and so at farthest only susceptible of a Teutonic or other baptism. But this view is so alien to popular prejudices, that it finds few supporters except among professed Anthropologists, and even among these there are still many dissentients. By those, on the contrary, who are unqualified believers in race, as something independent of area, England and the Lowlands of Scotland are regarded as thoroughly, and in a sense, permanently teutonised. And as this accords most easily with the prevalent notions about our "Anglo-Saxon" ancestors, it is, of course, the one most generally accepted. According to this popular Anthropology, however, Ireland is always spoken of as undoubtedly "Celtic," and it is so, because it did not partake with England in the benefit of the "Saxon" invasion. We suppose it need scarcely be said, that science cannot accept such "rough and ready" inferences from data so imperfectly ascertained and so gravely misapprehended. The race problem of the British Isles is scarcely susceptible of so facile a solution, which, sooth to say, demands the consideration of elements altogether ignored in this easy settlement of a rather difficult question.

We have spoken somewhat slightly of popular notions on the race question; but, we would not thereby be understood to imply that science has yet any right to assume a dogmatic tone on the subject. Anthropology is still at an incipient stage, and those who have shown the greatest mastery of its principles and the minutest acquaintance with its details, will, if we mistake not, prove the most modest in their pretensions to speak with authority on questions still under discussion, and awaiting the light of additional facts and profounder speculation for their more effective elucidation. It is thus with the great race problem of Europe. We know, that at present its peoples are predominantly Caucasian in type and Aryan in language; and there is adequate evidence that they have been thus characterised throughout the historic period. And yet, its quaternary men, to say nothing of later varieties, were ruder than any aborigines yet discovered. Now, of the process of supercession we know nothing. It was, of necessity, transacted ere written records came into existence, and we have not yet learned to spell out those bequeathed to us from other sources. We have, therefore, to be contented with the fact, rendered indisputable by recent discoveries in Archæology, that there has been a succession of races in Europe, and that its existing Aryans are but the latest link in the series, while its Esthonians in the South and its Finns and Lapps in the North, though no doubt the remnant of earlier races, do not represent the first.

Of course, Ireland participated in these changes ; perhaps, however, in a manner somewhat peculiar, arising from its geographical position as the north-western extremity of Europe, and so the final recipient of its manifold immigrational invasions from the south and east. If we mistake not, there are still perceptible traces of this speciality of position and fortune in its existing population. The Iberian character of the peasantry in the south and west has been often noticed. Even an approximation to an absolutely negroid type has been occasionally detected by keen observers. Now, it may be said, is not this last a remnant of the quaternary man? And what is the first, but a remnant of the Esthonian period not yet fully absorbed by later types? Quite certain it is, that inferior and non-Aryan racial elements are clearly perceptible in the population of the sister isle, and this, too, in much greater strength than in Britain. In the latter they are rare and exceptional, and, therefore, probably due simply to atavism, while in the former they are sufficiently common to warrant the suspicion, if not to sustain the conclusion, that they have been uninterruptedly transmitted, and are, therefore, due to persistence of type on the part of an older and wider, but still not wholly extinguished, race. We allude to these facts—dim and distant as they must seem to the general reader,—not, we trust, in the spirit of Anthropological pedantry, but, because they in a measure help to explain that peculiar impulsiveness and excitability always so characteristic of the Irish, who have thus, perhaps, inherited a rather larger bequest of the passional elements from prehistoric races than most other European peoples.

We would not, however, have the foregoing statements and suggestions misapprehended by the man of science, or misapplied by the statesman. The speciality of the Irish in their relation to rude or prehistoric types, is merely one of comparative aggravation. It has been said, that if you scratch a Russian you find a Tartar, so if you stir a Spaniard too deeply, you rouse the Moor. Something similar may, perhaps, be said of the French and English, only the savage does not here lie quite so near the surface. This is a subject demanding far more attention from Anthropologists than it has yet received. Among the ruder individualities, even of the most civilised nations, we often find types, decidedly barbarous, however produced, whether by degeneracy from a higher or persistence through a lower race. What phrenologists, perhaps rather unfairly, term "the criminal type," is an instance of this. We remember being particularly struck with the Turanian character of a group of murderers from the collection of the late Mr. Holm, when the old gentleman made us "sup full of horrors," by a stupendous lecture on the organ of de-

structiveness and its manifestations. This, however, is only a branch of the much wider subject of caste to which we have alluded in a previous article, and which must some day come up for solution at the hands of future Anthropologists.

But whatever may be the number or diversity of prehistoric racial elements still extant in Ireland, we can have no hesitation in assigning it to what is now known as the Celtic area. It is so in common with the whole of the British Isles, and its peculiarity in this relation, is the imperfection of its racial baptism. This perhaps needs some explanation. Few facts are now better established by Archaic and Historic Anthropology, than the periodic baptism of certain types by their racial correlates. The conquest and colonisation of the Celtic area by the Teutons is an instance in point. The previous conquest of the same area by the Romans is another. Now, from the latter the Irish were wholly exempt, both to their moral and physical disadvantage. And they have but imperfectly partaken of the benefits of the former. The result is, that throughout large portions, more especially of Munster and Connaught, we find the Celt in a state of racial exhaustion; while he everywhere lacks that political and municipal training, which we owe to the domination of Rome, and that social organisation which we have derived from Feudalism. This was doubly unfortunate, for these necessary processes not having been effected at what may be called the right time, and by appropriate instrumentalities, have to be accomplished now, in the midst of a complex civilisation, and by agencies not altogether fitted for so rude a task.

From what has been said, it must be at once obvious that Ireland is, under every point of view, an exceptional country. It is so because, till recently, it remained both geographically and morally isolated from the rest of Europe. It stood out of the highway of events, and so did not partake of the expansion and invigoration which they have communicated to the remainder of Christendom. It was a moral fossil, like India, the only difference being that India is a civilised, while Ireland is a barbarous fossil, but both these extremities of the Caucasian area have been so shut out from the influence of passing events during the whole historic period, that they now present us with the sad spectacle of at least partial paralysis in all the functions of their higher life, the principal evidence of returning vitality which they have yet afforded being rather strong convulsions, painful to themselves and troublesome to their nurse.

Ireland has been often spoken of by historians and statesmen as a country unfortunately arrested at an incipient stage of its national life, by the intrusion of a stronger and more civilised race, who thus prevented the natural development of its intellect and institutions,

for which, the attempted substitution of their own laws, customs, and cultus, was a very inadequate, because radically inappropriate, compensation. And there is great truth in this statement, which, however, only involves an exposition of effects, not of causes. Ireland was susceptible of this institutional arrestment because of the feebleness of her national life, and this feebleness was due to the effeteness of her Celtic type, not adequately invigorated, like that of Britain and Gaul, by a sufficient infusion of the classic element from the south, and the Teutonic element from the north. Nor are we quite sure that even this goes to the root of the matter. If from her extreme isolation in the far Atlantic, Ireland, during the historic period, was imperfectly Teutonised and not at all Romanised, may she not have had an equally exceptional destiny in the prehistoric period?

This is a subject deserving of grave consideration, even at the hands of statesmen and legislators. No mistake could be greater than to suppose that the nations of Europe are what we now find them, simply as a result of events transacted during the historic period, and so more or less definitively within our ken. As regards the classic peoples, for example, the important cycle of Cyclopean civilisation has passed through all its successive phases, from dawn to extinction, ere history or even tradition commences. So there cannot be a doubt that the Celts had passed through a period of power and comparative culture, ere they succumbed to the shock of Roman conquest. Brennus was probably not the first any more than the last Gallic chieftain who found his way over the Alps, now is it likely that the Gauls who invaded Greece were the first intruders of their race upon the sacred land of Hellas. Perhaps it is not too much to say, from the data now in our possession, that the day of Celtic greatness must have antedated the Christian era by at least one if not two thousand years, their Drudicial culture and the use of war-chariots allying them to the era of the great Egyptian and Oriental monarchies, if not to an age still more remote. Now the attainment of such a position, implies much previous discipline, involving, among other things considerable racial interaction, the precycle of Roman and Gothic colonisation. And, judging by her historic experience, there is some reason to think that Ireland may have participated but imperfectly in this prehistoric colonisation, and hence, perhaps, the large remnant of prognathism, the imperfect nasal development, and other indications of organic rudeness and imperfection attaching to large sections of the peasantry, more especially in the south and west, and by which they are unfavourably distinguished from the Highlanders, Welsh and Britons, to say nothing of the more effectually developed English and French.

If there be any truth in the foregoing views, it must be at once obvious that the Irish problem is not institutional but racial, and that the unfortunate speciality of the Sister Isle is not primarily misgovernment, but racial effeteness, the effect of imperfect colonisation. Now whether this effeteness antedates the Celtic era, may still remain an open question awaiting solution from farther inquiry at the hands of Anthropologists, but it certainly and without any doubt postdates it. Ireland has not been Teutonised to the same extent as England, France, Lombardy or Spain. But a Teutonic baptism was a racial necessity of the Celtic area, and it was accordingly provided in the shape of Gothic, Frankish, Saxon and Scandinavian invasions and settlements. Now Ireland partook of the last, when the Norwegians settled at Dublin, Waterford, Cork and Limerick, the only towns of any significance at the period of the English conquest. But their settlements in most of these places seem to have been principally urban, and so quite distinct in character from the Saxon conquest of England, and the Frankish conquest of France. It did not leaven the entire population by the introduction of a new racial element, and it did not discipline them by the institution of Feudalism. At farthest, it but prepared the way for the English, and along the eastern coast, laid the foundation of the Pale.

We are now then in a position to understand the real function of English conquest and colonisation. It was supplementary to the utter want of Roman rule, and the imperfect Teutonic baptism, by which Ireland has been unhappily contradistinguished from most of the remainder of the Celtic area of modern Europe. It was simply the carrying out of a great racial law—underlying, we may here remark, all small talk of peace societies, and all tall talk of political economists, *doctrinaire* statesmen, and other well-meaning but impracticable people, who would improve upon the plans of Providence, and make their revolutions out of rosewater. It was and is the terrible necessity of circumstances. From Londonderry to Cork on her eastern seaboard, Ireland, thanks to Danish, Norwegian, and British immigration, has been subjected to more or less effective colonisation, and with the exception of the old Norwegian town of Limerick, it is here alone that we find agriculture or manufactures, in an approachably satisfactory state. And even here, if we compare the condition of thoroughly Anglicised Baronies, like that of Forth near Wexford, with the neighbouring districts, we shall be impressed with the conviction, that even this colonisation, extensive as it was, might have been made more effective, with lasting advantage to the occupied country. We are aware that although calmly expressed, this is a terribly cruel utterance. But what if it be the truth. Euphuistic nonsense and beneficent

platitudes will not alter the laws of Nature, which have to be fulfilled under ever-increasing penalties, of which some are being paid by Ireland at the present moment. Compare Ulster with Munster, or Leinster with Connaught, and you will begin to understand what effective conquest and colonisation, even at a comparatively late period in European history, might have done for "old Ireland" as our Hibernian friends so fondly phrase it. But if you would know the full loss of Ireland in not partaking of Roman civilisation and Teutonic colonisation, simultaneously and proportionately with the remainder of the Celtic area, you must compare "old Ireland" with England, or the lowlands of Scotland, or the north of France. "Ireland for the Irish" is no doubt a splendid war cry, and carries with it a semblance of justice and a sound of patriotism, but in sober truth it is precisely where Ireland is most Irish that it is most poverty stricken, and where it has been most colonised, that it is most prosperous.

Such, then, are the facts. Now what do they imply? The application of our nostrums, say the *à priori* legislators. We will administer any number of "Acts of Parliament" to Ireland, till she is well! She has been injudiciously treated—that is all. We will give her just laws and amended institutions, and await the result. Ah, my friends, you told us the same story about Mexico and the South American republics—and what have you made of them? Miserable failures all, the old Indian blood proving too strong for you and your paper constitutions. No doubt Ireland has been misgoverned, as France and England, Spain and Italy once were, when the iron-heel of the Goth was stamping out their ancient institutions, and his sword was implanting the germs of those which were to succeed them. The pity is that these things were not done for Ireland at an earlier date, and then perhaps a Scandinavian colonisation might have rendered an English conquest unnecessary—and so impossible, as happened in Scotland. Again, we know that these are very unpleasant utterances, quite unsuited to any platform—even that of "the house"—but supposing that they are true, will unanimity in their condemnation render them false, or the consequences which they imply, nugatory?

And do we then despair of Ireland? By no means. On the contrary, we think that she is now in the very crisis of her racial regeneration. Hence her grief. Two hundred thousand patriotic Milesians are not wafted over the Atlantic annually by purely Favonian breezes. No such exodus ever did take place save under a certain measure of compulsion. We would not undervalue the suffering which this implies. Our consolation arises from the perception that it is not a perennial but epochal phenomenon, due to a

combination of special, and, in a sense, exceptional circumstances, recurrent only at rare periods of ethnic commotion. Such an exodus implies much, not only to the country of its reception, but also of its ejection. To the States it is the counterpoise of the German element. To Ireland it is the preparation for a more effective Teutonic-Celtic development, akin to that which has been already accomplished throughout a large portion of Britain. To both it must prove ultimately beneficial, if only as a fulfilment of the law of Nature, who abhors lengthened periods of isolation and stagnation, and generally supplements these by succeeding periods of emigration and racial regeneration.

We have said that Ireland was not conquered and colonised at the right time ; we meant for its present peace and well-being. Contemplated from the mundane stand-point, this, like all other great racial movements and historic events, resolves itself into the manifestation of a law, whose operation is unerring, and whose ultimate results cannot fail to prove beneficent. It would seem that most social baptisms are partial, and what we would call imperfect ; thus in the case of the great Teutonic colonisation of the old Celtic area, we find that in Britain, the Highlands of Scotland, the mountains of Wales, and the Peninsula of Cornwall, were reserved, in a measure, as Celtic preserves, to react, at various periods, with considerable force, on the more Teutonised area of the central and eastern provinces of the island. The heptarchy reaped the first result of this reservation, in the predominance of Wessex ; and Britain probably will not have gathered in the final harvest from this arrangement, till the close of the present cycle of European civilisation, when, once more effete and exhausted, she will again await her renewal at the hands of a ruder and less gifted but more muscular type than the then overwrought and effeminate remnants of her imperial greatness and her refined culture. We see the same phenomenon of reservation, as respects France, in Brittany and largely throughout the south ; we see it again, as to Spain, in the two extremes of Biscay and Andalusia. Similar remarks might be made in the classic area, where, for example, Magna Græcia remains but imperfectly Latinised and still more imperfectly Teutonised to this hour. The purpose of this reservation appears to be the more effective preservation, and ultimate resurrection, of the temporarily submerged type ; now, thus contemplated, Ireland is but the extreme west of the Celtic area of Europe, the last and best preserved retreat of a refined, sensitive, and intellectual race, already, through its better baptised divisions, in the van of civilisation, and apparently preparing for the resumption of imperial supremacy, as the concluding act of the great drama of European civilisation.

This brings us to the mission of Ireland and her place, not merely in British history, but in the great scheme of humanitarian development. No man capable of estimating the forces which have carried civilisation and empire on their north-western course for the last five thousand years, can doubt their inevitable culmination at the terminus of their stupendous march. Rome—whether we contemplate her geographically as a Mediterranean not an oceanic power, or as a heathen not a Christian empire, was obviously not the terminus of the imperial movement, nor the closing scene of the European drama, whose fifth act is only now commencing. In some previous papers we have shown that this must be performed not on a classic but in a Celtic area, not in Greece or Italy but in France or Britain, and preferably in the latter; hence the inordinate growth of London, so ludicrously disproportioned to the merely metropolitan demands of Britain, but perfectly in accordance with its present position, as the exchange of the world, and its impending greatness as the capital of civilisation. But this implies the exercise of a mundane power on the part of the British people, of which we have the faint promise and dim foreshadowment in their present mercantile influence and colonial extension, and perhaps also in the extent to which their institutional example has already modified most of the once despotic governments of Christendom; but true imperial leadership implies far more than this, especially when that leadership is to be based on a Celtic area, and to be exercised by a classically and Teutonically baptised but nevertheless radically Celtic population. For this implies—in addition to the mercantile enterprise, manufacturing industry and mechanical ingenuity by which Britain is now so especially distinguished, nay, in addition to their respect for law and their consequent capacity for the enjoyment of a well regulated liberty, by which her people are so happily characterised—an æsthetic culture second, if second, only to that of Greece, together with a refinement and delicacy of thought and feeling, a sensibility to emotion and a profound sympathy with nature, never reflected in the literature of either a Classic or a Semitic people, and awaiting its full and effective expression at the hands of those who have already produced a Shakespeare and a Shelley in poetry, and who, despite philistinism and the all-pervading worship of mammon, still prevail to speak of literature in the words of Matthew Arnold, and of art in those of John Ruskin.

Now we are fully aware that if there is to be a Celtic as there was a classic empire, it must, like its predecessor, be dual, and that in this division France enacts the part of Greece and Britain that of Rome, but, we would add, of Rome spiritual as well as temporal. Now it is her Celtic elements that can alone qualify her for the former function, and hence, perhaps, the distinct preservation of the Welsh, Gaelic,

and Erse speaking peoples, within the narrow compass of these highly civilised British isles to the present hour. They are so much latent force that cannot be discounted for ever, and must tell on the tone of the national mind, when the exaggerated practicality and vulgar materialism of the present shall yield, in due time, to the nobler aspirations and grander purposes of the future. Now the special quality of the Irish, as contradistinguished from the British Celt, whether southern Loegrian or northern Gael, is not strength but delicacy, not force but refinement, not vigour but spirituality—the very qualities that we want imported into our literature, our art, and, we may add, our religion. But why then, it may be said, have the Irish not manifested these rare gifts more frequently and in richer profusion during their connection with England, and notably in the literature and art of the last two or three centuries. This brings us back to the history, and so to the misfortunes, of their unhappy country.

As we have already seen, the speciality of Ireland is the imperfection of its ethnic baptisms and the consequent postponement of its racial regeneration; so that while France and Britain have been passing through a great cycle of Teutono-Celtic development, under which their national life has attained to vigorous manifestation both in thought and action, the comparatively isolated land of Erin has been struggling in the throes of a belated conquest and colonisation. Combined with this it has also been subjected to another speciality, that of continued dependency, which has only of late ripened into complete incorporation. To the eye of an Anthropologist these latter specialities were but a natural result of the former, and both were due primarily to geographical isolation, which has now happily ceased. As already remarked, from the mundane standpoint the seeming loss of these many centuries of national life is doubtless a small matter; nor can we doubt but the coming ages have an ample compensation in store, both for humanity as a whole and also for the suffering people in particular. But, nevertheless, as seen from the immediate proximity of Britain, and yet more as felt by a sensitive and cultured Irishman, few spectacles are more melancholy than that of the intellectual desolation of the sister isle, whose richly gifted sons should have furnished some of the foremost names in the annals of European culture, but for whom we look in vain when we would seek the compeers of Dante and Shakespeare, of Raphael and Michael Angelo, of Bacon and Newton, of Voltaire and Goethe. Italy, as we have seen, furnishes nothing similar; for though subdued in arms she still remained supreme in intellect. To find a parallel we must go to Greece, exhausted by her many centuries of classic civilisation, and then writhing under the iron heel of Turkish barbarism.

Would we then be understood to imply that either individuals or nations were responsible for this? By no means. It was the terrible inevitability of circumstances. As the last province of the Celtic area to be baptised, Ireland is naturally the last to be regenerated. If it is late in receiving the morning rays of modern civilisation, it was also late in losing the vesper glory of Celtic culture. When Gaul and South Britain were Roman provinces, Ireland still retained her Celtic language and institutions untouched, so that when the Christian missionary landed on her shores the literary dialect of the national tongue was spoken at her courts, the Druid with his sacred traditions unbroken, still officiated at her altars, and the Bard with his epic and amatory poetry in perfect preservation, still sung his inspiring strains as he had done in the days of Oisín, and for a thousand years before. And, although Norwegian kings had reigned for centuries at Dublin, Waterford, and Limerick, Erse still remained the mother tongue when Brian Boróimhe won the battle of Clontarf, and gave the Irish their last chance of founding an independent and Celtic nationality, which, here, if anywhere, might have been expected to survive in its integrity. And, perhaps, sentimentally, we may be permitted to regret that it did not—if only for the sake of the commonwealth of letters, which has thus lost, if not a language, then a literature, unique in character and abounding in mythology, poetry, and tradition from ages now virtually prehistoric. The day for fully appreciating our loss in this matter, however, has not yet arrived. Classical pedantry and Saxon philistinism can still afford to despise Celtic as they once did Oriental studies; but the lettered or unlettered barbarism that would neglect the roots of the indigenous civilisation of half Europe cannot last for ever. And so a day for the profound and earnest study of Celtic history and literature will doubtless yet dawn, and when it does, Ireland will not be wanting with another O'Donovan and Eugene O'Curry to assist in the process, nor will her contributions to the common stock of this peculiar scholarship be accounted wholly unworthy of attention.

But, to return to our more immediate subject. The true Pagan culture of Ireland, like that of all Europe, whether Classic, Celtic, or Teutonic, sank into dim eclipse before the triumphant diffusion of Christianity. This is a matter for whose honest and searching investigation the age is not yet prepared. Suffice it, then, that it was not the Norsemen nor the Anglo-Normans, but the Christian priests and their zealous converts who made the first and most destructive attack on the venerable edifice of Druidic learning. They exterminated the entire priesthood, and with it, the scholarship of Celtic heathenism, leaving only the Bards to sing in martial strains of the heroic deeds of an age and faith for ever gone. Ireland is rather valuable as an illus-

tration of this time-honoured process of sacerdotal destruction of alien records, as it was not here complicated by the foreign element of Roman invasion, so that we have the extermination of the Druids and the loss of their lore, as the effect, pure and simple, of the triumph of a hostile faith. Let not the spirit of the foregoing remarks be misunderstood. Druidism, together with that phase of Celtic life and development, whereof it was the more intellectual expression, had, doubtless, served its purpose in the great economy of the world, and so it was cast aside like an outworn garment. But we could have wished, that in this far off Ireland, as in the yet more remote Iceland, the form and purpose of the bygone time of extinct heathenism had been fully preserved at least in written records, for the study of posterity. But, as already hinted, perhaps these regrets are premature, if not superfluous, for the generation which has decyphered the hieroglyphics of Egypt and the cuneiform inscriptions of Assyria, which translates the Veda and attempts to interpret the Avesta, can scarcely continue to neglect Celtic antiquities—pedantry and Philistinism to the contrary notwithstanding.

The fact that Druidism in Ireland succumbed to Christianity, is no proof of any especial weakness in its Celtic elements, as a similar subsidence of heathenism occurred sooner or later over the whole of Europe, this being, as we have elsewhere shown, one phase of that duplex invasion, moral and physical, to which the exhausted Classic and Celtic areas were then subjected; while the well-deserved fame of the Christian Irish schools in the seventh, eighth and ninth centuries, is an indication that whatever defects there may have been in the social or political condition of the Irish people at this period, the evil had not extended to their educational institutions. The fatal weakness of the Irish intellect is best evidenced in the fact that this roseate dawn never brightened into the meridian splendour or matured into the vesper glory of a perfect day. It was a fair but delusive promise, that thus far has had no fulfilment. Scotland, which produced a mediæval Duns Scotus, has also given us a modern David Hume and Adam Smith. While the Venerable Bede and the English Alcuin, have not wanted successors, whether for learning or ability, in recent generations. But who among his countrymen shall we name as the compeer of John Erigena? We are aware that the Irish speak of this as one of the disastrous effects of English conquest, which not only arrested their political and social, but also their intellectual development, at a critical period; an assertion, perhaps, not wholly devoid of foundation, but to which their social and political condition at the period of the English invasion gives but little confirmation. From the battle of Clontarf to the landing of Strongbow, there was

nothing external to prevent, and everything to induce, the Irish people to coalesce into at least a federative nationality. Nor can we doubt that had the power of the Norsemen been as great in Erin as that of the Franks in Gaul, or the Saxons in England, this most desirable result would have been accomplished. But the first tidewave of the Teutonic immigration was not competent to this. It left Ireland, over its larger expanse, still in a state of Celtic exhaustion and clannish confusion, neither adequately baptised by Scandinavian blood, nor effectually reorganised by Scandinavian institutions. And the English invasion was the consequence; this being the form in which, from geographical position and other circumstances, Ireland had to receive the completion of her alien baptism. Now a country so circumstanced, to all appearance so utterly devoid of the simplest elements of national regeneration, could scarcely have emerged unaided, into the full vigour of that new intellectual life, which was manifested throughout the greater part of Western Europe. To have done so, it must have proved an exceptional member of the Celtic family of nations, whose destiny it has been to undergo a thorough Teutonic baptism as a part of their preparation for that vigorous, moral, and material development, to which they have attained under the regenerative and expansive influences of modern civilisation.

Again, let not the tenor of these observations be misconstrued. We do not undervalue Irish genius. On the contrary, as already observed, we regard it as possessing a peculiar delicacy, refinement and susceptibility, in virtue of which it is destined, in a more poetic and spiritual age, to surpass that of either France or Britain. The fact that Ireland is the last province of the Celtic area to be intellectually developed under the influence of our modern material civilisation, and predominantly analytical scientific culture, is by no means a proof that she is the lowest in the scale. The indication, at least to a certain class of minds, is perhaps the very reverse of this. The true Irishman is intuitive and synthetic in the cast and character of his intellect, manifesting in this, as in much else, a certain orientalism in his gifts and proclivities, not easily explicable by our present historic data, albeit Archæology gives some faint promise of ultimately solving this racial mystery of the *ultima Thule* of European civilisation.

But it would be unfair to regard the existent Irishman as the perfection of his type. Save in exceptional instances, he is not so in the sense in which an Englishman or Northern Frenchman represents the regenerated Celt of his area. The ethnic baptism of the sister isle is yet far from complete. The process of racial amalgamation and supercession is still in active operation. The great exodus is an event

of which Irish history affords no precedent, and which for its extent and ethnic importance, is unexampled in the annals of any other portion of the Celtic area. The effects of this movement will be felt for centuries, nor can it fail to be followed, in due time, by a considerable British immigration, which may ultimately assimilate Munster and Connaught, to at least the ethnic condition of Leinster and Ulster. Now we would not insinuate that it will be necessary to wait for the completion of these processes, ere we can expect an effective display of Irish genius; albeit historic Greece was an ethnic product of the racial interfusion of the Heraclidæ and Hellenes, so accurately portrayed, prior to their amalgamation, in the *Iliad*. So the Italy of Dante and Tasso, of Titian and Michael Angelo was the result of Gothic colonisation; while Gaul and Britain had to wait for many a century ere they emerged as the France of Racine and the England of Shakespeare.

It has been said that Providence is in no hurry. Its steps are timed, not simply by centuries, but millenniums, and one of the latter has now elapsed since the landing of the Norsemen. Moreover, we live in an age when political, social and intellectual movements have been accelerated, and when, consequently, moral causes ultimate more rapidly in their appropriate effects. Ireland is no longer the isolated Erin of the past. Steam has bridged the Atlantic for her retreating Celts. It has yet more effectually bridged the seas between her and Britain. She is now an integral portion of the European system, and must be assimilated in culture to the area of which she is so fair a portion. We do not expect her to sympathise with the philistinism of the nineteenth century. We do not think it desirable that she should do so. Her mission—if she has one—extends beyond long chimneys and profitable investments. Her higher inspirations must come from the age as yet but faintly dawning. She is the foundling of the present. She will be the darling of the future; the spiritual complement to England's material power; the intuitive supplement to Scotland's coercive logic; the fecund mother of sages and poets, painters and composers, in that great day, when the revolving cycle of Celtic genius shall strike the hour, kindred to that of Greece, when she breathed the Parian into life and framed her unapproachable language into the rhythmic cadences of an immortal literature.

Of course, our Anthropological readers will now be at no loss to understand that we do not put unlimited faith in the prescriptions of statesmen and political economists for the solution of "the Irish difficulty." In its main features and in its producing causes, this lies largely beyond the reach of their art and without the sphere of their wisdom. The ills of Ireland that legislation can remove are on the

surface. The utmost that can be done in this direction is but the removal of impediments to her prosperity. We would not undervalue just laws and good government. But in all the instances with which history has rendered us familiar, these things were essentially effects, not causes, that is, they were the growth of circumstances, and so the reflection and expression of a people's social, moral, and intellectual condition; not an extraneous force, not an imported commodity, but the natural product of their national life. Institutions, ere they can discharge vital functions, must be a part of the organic structure of the body politic. Custom is older than law. Enactments, when effectual, are but the echo of an unwritten code. All that legislation can really accomplish, is but to formulate the social elements already existing in a community. "Acts of Parliament" which transcend this, are an incumbrance. Imperial edicts that go beyond it, are a restriction. We do not expect people who believe in paper constitutions to accept these simple truths. They think nations can be made; we, on the contrary, believe they must *grow*, and that the racial elements of which they are composed will determine the ultimate form they are destined to assume.

The social and intellectual regeneration of Ireland is simply a question of time. It was not statesmanship that produced the clearing exodus, by which not only the superabundant Celtic, but also pre-Celtic element is being reduced within manageable limits. And it is not by statesmanship that the invigorating British immigration is to be effected. Irresistible circumstances produced the first, and will likewise accomplish the last of these great ethnic movements. The age of conquest and confiscation is happily past, but the age of monetary transfer and peaceable colonisation has arrived. Irish agriculture and manufactures only require British skill and capital for their development and they will obtain them.

And this brings us back to what the reader will doubtless have seen was the underlying idea of this paper, namely, the imperfect colonisation of Ireland in the past, and the possibility of an effective English immigration in the future.

We suppose no Anthropologist need be told that the popular and traditional notion about the Danes and Norsemen being simply marauding viking, is wholly false. These daring sea rovers may have acted as pioneers, but throughout Britain and Ireland they were generally followed by merchants, artisans, and commercial mariners, and the misfortune of Ireland was that, whether from her remoteness or the growing exhaustion of Scandinavia, she received a very inadequate supply of these hardy and industrious settlers. But this was followed by another, arising out of the special character of the En-

glish immigration during the slow and troubled process of conquest and occupation. The Anglo-Norman was pre-eminently a soldier—not a worker. He needed Frank and Saxon to precede him for the success of his stringent yet chivalrous feudalism. Had the rural population of Ireland consisted of Teutono-Celtic agriculturists, in place of almost purely Celtic clansmen, he might, and probably would, have made it a second England—albeit, as well remarked by Goldwin Smith, feudalism implies a king as the apex of the social and political pyramid, and this important element Ireland never possessed, so that her barons sunk into chiefs, and society remained in a state of chronic disorganisation. From the accession of the Tudors to the battle of the Boyne, repeated confiscation only made confusion worse confounded; this summary and profitable process of punishing rebellion only sufficing for the introduction, on each occasion, of a fresh flight of unprincipled harpies and political adventurers, whose object was not industrial enterprise, but legalised spoliation. To this, however, there was a partial exception in the rather extensive colonisation of the northern and eastern counties of Ulster under James I, and its completion by the citizens of London under William III; and we see the effects of this introduction of a true industrial, and, therefore, really civilising, element in the present prosperity of Belfast, Coleraine, and Londonderry. Not, we apprehend that Ireland ever will be as effectually Teutonised as England, or the Lowlands of Scotland; Cornwall, Wales, and the Highlands, show with what tenacity the Celt holds his own in the west even of Britain. Now, Ireland is pre-eminently THE west of the entire Celtic area of Europe, and so probably will remain to the end, less baptised with alien blood than most of her neighbours. Moreover, it should be remembered, that in receiving an infusion of Scotch or English immigrants, Ireland only obtains a Teutono-Celtic colonisation. And this probably accords with her place and destiny as the last and best preserved retreat of the Celtic race in the past, and so, perhaps, their finest, because purest exponent in the future.

The application of the foregoing remarks to the minor details or special features of Irish politics is so easy, that any formal attempt of the kind here would be superfluous. The question of the Established Church, for example, is part of a larger whole; for its maintenance or disendowment involves principles whose application cannot be limited to the Sister Isle. Religion, as a social element, no longer looms out in the vast and almost overwhelming proportions which it assumed in the sixteenth and seventeenth centuries. The more earnest attention of the general public is now absorbed by politics rather than ecclesiastics. while literature and science largely occupy our higher minds, to the

displacement of theology and its accessories. Hence "the Church" as an institution, whether Catholic or Protestant, is of far less significance than in former centuries, and so a universal disestablishment is looming as a by no means remote possibility in the future. It has already been accomplished in America, and may impinge on Europe through Ireland. Indeed, without an arrestment of the present predominant tendency to institutional disintegration, we may say this, like much else, is an inevitability. But let no one suppose that Protestant disestablishment will prove a panacea for the ills of Papal Ireland. These, as already remarked, are racial not institutional in their origin. That the Reformation, as a Teutonic movement, introduced a phase of faith and worship ill-adapted to the Classic and but imperfectly suited to Celtic nations, there is no doubt but the Cornish Wesleyan, the Welsh Calvinistic Methodist and the Presbyterian Highlander, amply suffice to show that under favourable circumstances, Protestantism is by no means incompatible with a very strong infusion of the Celtic element. The truth is that the Irish are Catholics, not because they are Celts, but because they were oppressed by the English Protestants, whose creed they rejected, not from conviction but patriotism. The religion of the Celt as a racial speciality, has yet to be developed, and when it is so, we may be quite sure that it will differ alike from the gross sensuousness of the Classic, and the cold intellectuality of the Teutonic phase of belief and worship. But in that development France and Britain will have to be consulted as well as Ireland.

It is the same with land tenure. You cannot deal with this as a purely Irish question. There is no doubt that injustice was done both in Ireland and the Highlands, when the common land of the Sept was vested as private property in the chief, and the participant clansman reduced to the condition of a tenant at will. But it was an injustice that must at some time have been perpetrated in England and France, albeit the records of this "legalised spoliation" have utterly perished. But it is now too late for modern legislation to recognise this primitive condition of things. The Sept, like much else that was once a part of the organic framework of society, has perished, and the nation has taken its place. Now it is quite possible that a time may come, when the land, which no man has made, any more than he made the air and the sunlight, no man will be permitted to possess absolutely, but only to use under conditions, appointed by the State, as sole and inalienable proprietor of its own territory. But this is a very different thing from that exceptional legislation which would vainly endeavour to satisfy Irish discontent by an impossible return to Brehon laws and clannish usages. Again, let us clearly understand

that the inevitable future of Ireland is not a return to the defunct institutions of primitive Celtic society, but a march onward with her compeers, into all the grand possibilities of modern civilisation. The exceptional condition of Ireland in the past, was due to her isolated position, and as the latter has ceased, the former cannot continue. Her obvious destiny is a racial and social assimilation to the remainder of the Celtic area, which implies that she must proceed with her baptismal regeneration, by the time-honoured processes of emigration, immigration, and amalgamation, and then base her progress and prosperity, not on foreign aid or alien leadership, but on the irrepressible energy and exhaustless resources of her renewed population.

Similar remarks are applicable to the industrial future of Ireland. She is simply behind England and France, as the latter were belated in comparison with Italy. The material prosperity of the old Classic and Celtic areas, as they gradually emerged into renewed social and national life, after the confusion attendant on the fall of the Roman Empire, was due in large part to the infusion of fresh energy, by the immigrant population, which vitalised and reinvigorated the municipal institutions and trades established by the Romans, and enabled them to develope into the corporations and guilds of the middle ages. But as Ireland never enjoyed the advantages of the Roman Municipia, so she only exceptionally partook of the commercial enterprise and industrial energy of the Norsemen. To the latter, however, she owes the foundation of whatever prosperity has been attained by Dublin, Cork, Waterford and Limerick. Still, as already remarked, their influence was local and almost purely urban, so that in reality the great work of social edification and industrial organisation, through all its successive stages from the clan to the nation, has been effected under English leadership, supplementing, as yet we fear but imperfectly, the want of that Roman law and Gothic force, to which the remainder of Western Europe owes so much of its present wealth and civilisation. Thus we see that in her industrial, as in many other aspects, Ireland, over a large portion of her area, is still an anachronism. She is at best mediæval rather than modern, but in truth there is much both in Munster and Connaught, that a feudal noble or an Italian podesta would have pronounced barbarous, and on which a Saxon yeoman or English alderman of the early Norman kings, would have looked with that pity which borders on contempt. Ireland, we must repeat, suffers from imperfect colonisation and insufficient discipline, and as a result, she is still in the turmoil and commotion of that racial displacement, which was effected over most of the west of Europe, from the fifth to the tenth century. But time,

the great healer, has doubtless his compensations in reserve, though for these, as for other gifts of the gods, we must wait the Divine pleasure—or, if our Positivist friends prefer it, the operation of unerring law—a process not to be hurried, even by the omnipotence of Parliamentary enactments.

We have said that Ireland is an anachronism; she is so theologically, intellectually and socially, and she is so in her agriculture, manufactures and commerce. But this cannot continue. Nay, it is the almost unexampled rapidity with which this exceptional condition of things is ceasing, that occasions most of the discontent which now pervades the excitable but unreflecting population of the Sister Isle. Her cottar tenants are evicted, not slowly but in all haste, to make way for the modern agriculturist, who manages his farm on the Scotch or English model. And this great change is effected, not as it was with us, by slow growth and spontaneous action from within, but by example and influence, and not seldom by actual immigration and alien occupancy, from without. It is no wonder that under such circumstances, the land question is a source of irritation to the people and of disquietude to their rulers. The process of transition is too rapid for the comfort of either its agents or its subjects, and the wonder is not that we have a few agrarian outrages, but that we have not something occasionally approaching in its proportions to a servile or peasant war—a disaster from which the stupendous exodus could alone have saved us. Now what we have to do is simply to let this inevitable process of transition take its course. By meddling we may mar, that is, delay and disturb it. We may aggravate or we may prolong the feverish condition of the patient by our foolish nostrums. But the period of crisis has come, and he must pass through it, as other and equally good men have done before him.

It is the same with manufactures and commerce. Except in the North, they are still awaiting their inevitable development. Now, judging by the experience of the remainder of Europe, this cannot well take place, till the process of racial displacement and commotion has in a measure ceased. Security is a *sine qua non* of commercial prosperity, more especially in modern times, when capital so easily takes wing, and credit is subject to such fatal panics. But there need be no fear as to the ultimate result. The Irish are an ingenious and enterprising people, and they possess a natural taste, far surpassing in delicacy and refinement that of either the English or Scotch, approaching in this, as in much else, a French rather than a British standard. Strictly speaking, it is not the linen trade of Belfast, but the lace trade of Limerick which most truly represents the manufacturing skill of Ireland. Of course we do not expect the untravelled English reader, whose model Irishman is the mason's

hodman and bricklayer's labourer, to accept these conclusions. He can only judge by what he has seen. But supposing a Frenchman had only seen a Somersetshire peasant, fresh from the plough, could he conceive that out of this rough material, time and circumstance would ever frame the cunning hand and contriving brain of the skilled artisans of England. Ireland, we repeat it, is a vast reserve of intellectual resources for another and a better age than the present, when the finer rather than the stronger elements of humanity will be in demand. So, equally, she is a reserve of manufacturing skill, the needed complement to the hard practicality and almost grovelling utilitarianism of British industry, whose admitted want is taste. But as in her agriculture, so yet more in her manufactures, Ireland will doubtless be largely indebted to British capital and enterprise for her earlier steps. But once fairly started she has a path of her own, distinct from, yet allied to, that of the other clearly marked provinces of the great Celtic area of the west.

But it is time we should conclude, not because we have exhausted our subject, but our space. Our remarks have not been penned in haste, but are the result of many years' personal familiarity with, and residence among our Welsh, Irish and Gaelic fellow subjects. And as a result of such residence, we have not the least hesitation in saying, that the Celtic element, not merely as constituting the ethnic basis of our lowland Scotch and English population, but as represented in yet greater strength and purity by the sectional communities we have just named, is altogether underestimated, because totally misapprehended by the English public. We do not expect to change this opinion. It is sufficient that we know it to be erroneous. While the majority of Englishmen fancy themselves Saxons, or Anglo-Normans, they will of course despise the poverty-stricken remnant of the Celts. But the days of this popular fallacy are obviously numbered. Anthropology condemns it, and already in the eyes of those who have mastered the science of man, it is numbered with the prejudices of a bygone age. And whenever it shall be generally admitted that Britain is unalterably an integral portion of the Celtic area, susceptible of a Teutonic as of a Classic baptism, but nothing more, then will the day of justice to Celtic genius have arrived. We all know the beautiful and appreciative papers on this subject by Matthew Arnold, in the *Cornhill*. And these were written after only a few weeks' residence on the borders of Wales. But had he lived for years in her secluded valleys, and wandered not merely in the summer sunshine, but in the wintry mists among her mountains, and drank in of the enthusiasm of men to whom the names of Myrddin, Aneurin and Taliessin are still familiar as household words, we could fancy that

his sympathies would have been yet more deeply stirred and his noble eloquence have risen to yet grander utterances than those for which we are so deeply indebted to him.

It is the same with Ireland. You cannot know her people as a tourist. You cannot see them as they are, through the plate-glass of your railway carriage, or from the window of your hotel. To understand them you must live among them. They must know you ere you can know them—a truth of which most tourists, and not a few professed travellers, seem sadly oblivious. Not to aristocratic hauteur or philistine vulgarity, or sectarian bigotry, will they reveal the sacred sorrow bequeathed by six hundred years of defeat and humiliation. This sorrow and the love of country whence it springs, have never yet found befitting utterance in English words. The revealer of Ireland's heart is still to come. Thomas Moore was but the caged canary of a Whig drawing-room. There is more of the true soul of Erin in one air of Carolan, than in all the pretty melodies he ever penned. It is here we touch the key, by which alone it is possible for a stranger to unlock the deeper mysteries of Irish character. Ireland, like Scotland, must be interpreted through her music. The ecstasy of her joy, the agony of her grief, the ardour of her love, and the fervour of her patriotism, otherwise so silent or so extravagant, all find adequate and befitting expression through the medium of this universal language, where it still awaits that transfusion into our mother tongue, which, if we mistake not, will yet add another chapter of beauty and power to the ever-growing wealth of English literature.

GALL'S ORGANOLGY.

To the Editor of the Anthropological Review.

SIR,—On the second page of the leading article in your last number (p. 330), I read as follows:—"Why is it that psychology proper remains where it was 2,000 years ago? Solely because she was too proud or too ignorant to call in the aid of the physiologist and pathologist. So, too, the nearly hopeless and chaotic condition into which the discoveries of Dr. F. Gall, respecting organology, have fallen, is the result of, in the first place, insufficient foundation, and in the second, dogmatic teaching:" and in the next sentence but one, I am informed that "The discussions on the localisation of cerebral action,

before the Paris Anthropological Society, have inaugurated a new era in Science." Now, did the British student derive his opinions of Dr. Gall's discoveries from a perusal of his own writings, I should deem it superfluous to notice such comments as the preceding. Unfortunately, however, that vast storehouse of knowledge, and imperishable monument to the genius and industry of Gall, his work *Sur les Fonctions du Cerveau*, still remains a sealed book to the European public, demonstrating, with additional force, with each successive year's neglect, how greatly its author *was* in advance of his contemporaries, and *still remains* in advance of their successors.

Had I not been previously aware of Dr. Hunt's generous assiduity in blowing the trumpet for his friends, the Paris Anthropological Society, I should certainly have imagined that the announcement,—that the fact of the discussion of the localisation of cerebral action, before the Anthropological Society of Paris, inaugurated a new era in science, had been made ironically; that it had been adopted, in short, as a pleasant mode of rebuking some ill-judged pretensions put forth by the Society or its partisans, so extravagantly hyperbolic does it appear in the presence of the actual and long-standing position of this question. In the first place, it is a familiar fact, that there are a number of considerations which lead so irresistibly to the inference of the plurality of the cerebral organs that, to quote the words of Foderé, "they have been adverted to by almost all anatomists, from the days of Galen downwards, and even by the great Haller, *who felt the necessity (qui éprouvait le besoin)* of assigning *distinct* functions to *different* parts of the brain"; and Comte, the greatest of modern philosophers, says, "Two philosophical principles, now admitted to be indisputable, serve as the immovable bases of Gall's doctrine, as a whole; viz., the innateness of the fundamental dispositions, affective and intellectual, and the plurality of the distinct and independent faculties." In the second place, Gall left on record a series of observations of facts, which, he considered, justified him in associating the manifestations of twenty-seven mental functions with as many distinct localities of the brain; and no evidence has been adduced to invalidate Gall's conclusions, except, perhaps, in one instance, and in this it was not—as I pointed out many years since—the observations of this extraordinary genius that were at fault, so much as the inference he deduced from them.

It has too long been the fashion to advert, in a depreciatory tone, to the labours of Gall, in language which, whilst so conveniently vague and general as neither to require any definite knowledge, nor commit the utterer to any specific opinion, contrives to insinuate—by the enunciation of the merest platitudes as to the desirability of

collecting facts, and the undesirability of hasty induction,—that this great man was the inferior of the writer or speaker, in the caution and sobriety of judgment, which characterise the true philosopher. Surely, it is to be lamented, in the interests of science, that the critics of Gall give us no practical example of the philosophic method and cautious induction in the theory of which they are such masters. They appear to overlook the fact that—if an individual could collect and leave on record such a number of cases of coincidence between special development of brain and special manifestation of a mental function, not really connected with it—it should be tenfold easier to collect cases in disproof. Yet, where are they?

Not to refer to the stronger department of Gall's system, the larger organs of the propensities,—have his critics ever adduced, or can they now show us, an instance of a great mathematician, musician, or painter, small in the region of the brain, appropriated by Gall to number, music, or colour, or the portrait of the author of a dictionary, or a great linguist with sunken eyes? In short, whilst ready in *assertion*, so totally have they failed to illustrate their own precepts, that, having in view the wide divergence between their teaching and practice, one might be tempted to define "facts" as "a word constantly in the mouth of those who never collect any." Referring to this class of critics in his own day, Gall humorously, but sarcastically, remarked, "It would be difficult for such learned men to have recourse to so laborious a source of true knowledge as observation." Where a philosopher has, with patient assiduity, from boyhood to the close of a long life, devoted an unrivalled genius for observation to the collection of facts, and only after long investigation and close scrutiny allowed himself to found a conclusion from the evidence obtained; scientific names, even more eminent than those of our most distinguished critics, are not sufficient to release their bearers from the obligation of supporting their assertions by some kind of evidence, and in default of doing so, they are themselves exhibiting a glaring example of that hasty generalisation and want of philosophic caution they so glibly, and seemingly as a matter course, attribute to one of the most conscientious and painstaking observers of his own or any other epoch. In the mean time, let us not forget that when some supposed authority chooses to distrust the reliability of discoveries, not as the result of observation, but by assumptions furnished by self consciousness,—whilst hundreds of followers prefer the easy task of echoing an opinion, to questioning nature for themselves,—additional numbers impart no additional solidity to the flimsiness of the foundation on which the original dictum reposed.

I have been intimately acquainted with Gall's writings for more

than a quarter of a century, and for a still longer period have lost no opportunity of testing, to the best of my ability, the soundness of his views with regard to the seats of the special faculties, and the result is that, with the exception of those regarding the cerebellum, I am prepared to defend them all, as substantially correct. That the list of the primitive faculties was perfect and complete, or our knowledge of the exact functions and relationships of those discovered,—particularly in the case of the intellectual faculties,—thorough and precise, Gall himself never pretended, and would have been the first to disavow. Gall never undertook the construction of a *system* of psychology,—in fact, expressly disclaimed the pretension of doing so; he simply announced, as a fact, that observation showed that the development of a certain part of the head was associated with the tendency to act in a certain manner, or with the capacity for doing a certain thing. Gall's error with regard to the functions of the cerebellum is greatly to be regretted, having exercised a most unfortunate influence in retarding the reception of his doctrines, by creating a distrust of his care and accuracy as an observer, which, as I long ago pointed out, the circumstances, when rightly understood, do not justify.

At a very early period of my studies, contemplating the nervous system as a whole, it seemed to me that the harmony, everywhere else discernible, was violated by placing the seat of a propensity,—making the female an object of desire, and capable of being called into action by *ideas*—outside the cerebrum. After a time, I found myself almost insensibly connecting the large development of the region of the cerebellum with acute sensation and intolerance of pain. I examined the opinion of physiologists with regard to the function of this part of the brain,—and finding my idea discountenanced by their writings, and influenced also by reverence for Gall, and still more by the cases that had come under my own observation, indicating a connexion between a prominent cerebellum and strong sexual feelings,—I came to the conclusion that I must be mistaken in my supposition. Doubt and curiosity had, however, been excited, and I at length determined to compare the relative development of the cerebrum and cerebellum in the lower animals with their character and peculiarities. In the course of two years, I examined and separately weighed the cerebrum and cerebellum in nearly every species of bird and quadruped to be found in the British Isles, endeavouring, where practicable, to ascertain the variations, and determine the average in six members of each variety. The following is a very brief outline of the facts I obtained, and the inferences I was led to draw from them.

Observations on horses, pigs, and sheep, show that castration very slightly diminishes the size of the cerebellum, but that the diminution is so trifling as not to counterbalance the congenital variations which occur in the size of the organ.

Castration does *not* diminish the relative size of the cerebellum compared with the cerebrum, the development of the latter organ being quite as much ; or if there is any ascertainable difference, even more impeded, by the effect of the operation.

Unilateral castration produces no perceptible difference in the development of the lobes of the cerebellum. Having removed the right testis from a kitten three days old, I examined the cerebellum at the age of one year and a quarter, but was unable to detect any inequality in its sides, though having placed it in spirits, I repeatedly made it the subject of careful scrutiny at separate intervals of time. An examination of the effects of unilateral castration, in the cases of a ram and a hare, furnished the same results.

In birds, the development of the lateral lobes of the cerebellum is strictly rudimentary, consisting almost entirely of the root of the fifth pair of nerves, and no pons Varolii, as a matter of course, is discernible. The median lobe, or vermiform process, however, attains in this class to an unusual magnitude ; so much so, that the proportionate weight of the cerebellum, compared with that of the cerebrum, is not inferior to the generality of mammalia, ranging from 1 to 4 in the swallow to 1 to 13 in the grey owl.

These peculiarities of organisation suggest two questions,—first, what is the function possessed by the mammalia which may be said to be rudimentary, or wanting, in birds, except in the portion of their body to which the branches of the fifth pair of nerves are distributed ?

Secondly, what function is possessed by birds in a degree as commensurately greater than other vertebrata, as the relative development of the median lobe of their cerebellum surpasses that of the latter ?

The answer to the first question was clearly cuticular sensibility. The thin and membranous skin of birds scarcely presents a trace of nerves,—which would have been thrown away with such a covering as feathers,—and manifestations of surface sensibility appear almost solely restricted to the parts concerned in the selection and deglutition of food.

In pondering on the second query, I was struck with the capacity of birds for traversing great distances, and supporting themselves in a medium of so much less specific gravity than their bodies, together with the infinite grace and elegance which characterise their motions. Such a capacity demanded great muscular power combined with an

extremely delicate sense of resistance, and necessitated the existence of a proportionately large nervous apparatus for generating, storing, and distributing, the appropriate nervous stimulus. In the crow, whose motions are neither rapid nor elegant, the weight of the cerebellum is $11\frac{1}{4}$ grains, and that of the cerebrum 129, being a proportion of 1 to $11\cdot4$, whilst in the common gull, who sails through the air in graceful curves, or, tumbling and darting in rapid flights, sports with the wind when at its highest, the weight of the cerebellum is 14 grains with a cerebrum of only 63 : a proportion of 1 to $4\cdot5$. The swift sparrow-hawk possesses a cerebellum of $6\frac{1}{2}$ grains and a cerebrum of $36\frac{1}{2}$. The slow grey owl a cerebellum of 9 grains to a cerebrum of 120, being in the ratio of 1 to $5\cdot6$ and 1 to $13\cdot3$. Finally, in the swallow tribe, who may be said to live on the wing, the development of the cerebellum reaches its maximum, being, as compared with the cerebrum, 1 to 4. In birds, then, I consider we may regard it as an established fact that the development of the cerebellum (practically consisting of the middle lobe alone) always bears an exact ratio to the locomotive power.

The question now presented itself, what animals occupy the opposite pole to birds with regard to the manifestation of cuticular or surface sensibility? The answer is the cetaceans, in whom the sense of feeling is so acute as to enable them to communicate with each other at long distances by the vibrations of the water. Pursuing a living prey, and obliged at short intervals to seek the surface for air, and thus lose sight of it, without this special endowment of sensation to keep them apprised of the motions of the object of their chase, they would lose all knowledge of its locality at each breathing time. Their sensibility to pain also appears to be very acute; for I have been assured by an individual, who once saw an embayed porpoise put to death by some fishermen, that the cries of the animal when wounded were heart-rending and conveyed the idea of most intense suffering. In conjunction with this extreme endowment of surface sensibility, the cetaceans present of all animals the greatest development of the cuticular system of nerves which pervade the whole of the layer of blubber interposed in this family between the skin and the muscles, and form a network of extreme minuteness on its external surface.

Now there coexists with this maximum development of the cuticular system of nerves in the cetaceans, just as marked a peculiarity in the structure of the nervous centres, viz., an extraordinary development of the lateral lobes of the cerebellum. In the porpoise, the size of the cerebellum as compared with the cerebrum, is as 1 to $2\frac{1}{2}$, its unusual bulk being entirely due to the enormous development of the great lateral lobes, which equal in absolute size to those of man, far surpass

his or those of any other animal (with one exception to be hereafter mentioned) in the proportion they bear to the other nervous centres.

These facts appear to me to point irresistibly to the conclusion that the median and lateral lobes of the cerebellum have separate functions, the former being the great ganglion of the nerves of muscular resistance, imparting a knowledge of the relative position of the different parts of the body, and the centre of gravity, and constantly developed in the ratio of the animal's agility and balancing power; the latter the great ganglion of the nerves of cutaneous sensibility, and always developed in the ratio of the animal's endowment with this function.

Had however any doubts of the soundness of this conclusion lingered in my mind, they would have been dispelled by an examination of the cerebellum in the Cheiroptera. These insectivora possess jointly the large lateral lobes distinctive of the cetaceans, and the large central lobe characteristic of the bird, and, in conformity with the views of the functions of these nervous centres just expressed, unite the fine tactile sensibility of the former class, with the agility and balancing power of the latter. The same knowledge of the relative position, the distance or proximity, of other bodies furnished to the cetaceans by the vibrations of water, the bat obtains from the pulsations of the air. Spallanzani found that bats when blinded avoided obstacles in their flight with the greatest precision, and this in places to which they were strangers. They flew with rapidity through apertures only just large enough to allow of their passage, and even avoided small threads stretched across the apartment, thus exhibiting an example of tactile sensibility so exquisite as almost to be equivalent to a new sense. The cerebellum in the bat is proportionately to the other nervous centres larger than in any other animal. In the common pipistrelle the average (drawn from six) is cerebellum .96 of a grain, cerebrum 1.78.

That there is a relation between the size of the occiput, and the sexual feeling, is I think undoubted, my observations on man impress me with this conviction, and in the horse, the ox, the sheep, and the cat, the diminished size of the nape of the neck in the castrated animal, when compared with the perfect male, is very preceptible. That the ancients were familiar with this relationship,—as well as with many other things, the knowledge of which was once supposed to be an exclusive appanage of modern times,—is evident from the lines

“Non illam nutrix orienti luce revisens,
Hesterno collum potuit circumdare filo.”

Apollonius of Rhodes, also, in speaking of the passionate love of Medea, says, “The fire which devours her, attacks all her nerves and makes itself felt even behind the head in that spot where pain is most poignant when an extreme fervour seizes on all the senses.”

In locating the sexual feeling in the cerebellum, therefore, I believe Gall to have committed an error of inference, rather than of observation. The convexity of the lower fossæ of the occipital bone and their protrusion backwards and downwards, really *have* a connection with the strength of the sexual feeling; but then these conditions are principally due to the development of the under surface of the posterior lobe of the cerebrum, and but in a minor degree to the size of the cerebellum, in the same way as the prominence of the eye, and pouching of the lower eyelid, indicative of philological talent, is mainly caused by the development of certain convolutions of the under surface of the anterior lobe which rest on the roof of the orbit. Not only is the range of variation or diversity in size, presented by the occipital region as a whole, much greater than the deviations from mean size exhibited by the cerebellum, but a larger *proportionate* share in causing these diversities must be attributed to fluctuations in the size of the posterior region of the cerebrum, than to fluctuations in that of the cerebellum, in harmony with the law, that the limits of variation increase in proportion as the functions of organs rise in the scale and become less indispensable to the continuance of life, as we see exemplified in the much larger range of variation in the size of the coronal region of the head—the seat of the affections connected with man's perfectibility and life in society—than in that of the basilar, the seat of those concerned with the conservation of the individual, or at most the family.

Gall's views of the functions of the cerebellum were greatly strengthened by several remarkable cases of loss of sexual feeling occurring after sabre wounds of the cerebellum, for which he was indebted to Baron Larrey. I think it scarcely admits of dispute that pathology offers irresistible evidence of a close connection between the cerebellum and the generative function. The number of cases of apoplexy in which irritation of the sexual organs has proved a correct diagnostic that the apoplexy was cerebellar, are alone sufficient to establish the fact. From my point of view, however, these pathological proofs of relationship are perfectly compatible with the location of the generative instinct in the cerebrum. A portion of the lateral lobes of the cerebellum approximating towards the mesial line must be associated with the *sensation of the sexual organs*, whilst a portion of the central part or vermiform process must have the duty of regulating and controlling the *ensemble* of the muscular acts and positions peculiar to the generative act, which are of a determinate character in different species of animals, and even seem to vary within certain limits in the different races of man. Now that there must be the closest connection between these two cerebellar

functions, and the instinct of propagation, is most certain ; for instance, we often see the latter called into activity in the dog, by the mere accident of his finding himself in a certain position. On some occasions—perhaps I should say normally—the chain of nervous action commences in the cerebrum on the presentation of the image of the female ; on others the spark of ignition lights on the other end of the train, and a peripheral excitant, by sympathetic influence awakens the cerebral desire. Such appear to be the relations between the external sexual organs represented by a portion of the cerebellum, and the true generative instinct seated in the cerebrum.

Let us now compare the comparatively venial error of Gall as to the functions of the cerebellum, with the strange blindness to the most notorious facts—viz., the structure of that interesting class the cetaceans, and the self-evident deductions to which they irresistibly lead—involved in the acceptance of the current doctrines of Physiologists as to the office of this portion of the brain. Dr. Carpenter's *Principles of Human Physiology*, which may fairly be regarded as an orthodox text-book on the subject, has for the last quarter of a century contained the following passage :—

“ In proportion as the extremities acquire the power of prehension, and together with this a power of application to a great variety of purposes, still more in proportion as the animal becomes capable of maintaining the erect posture, in which a constant muscular exertion, consisting of a number of most elaborately combined parts, is required—do we find the size of the cerebellum and the complexity of its structure undergoing a rapid increase. . . . Man surpasses all other animals in the number and variety of the combinations which he is capable of exerting, and in the complexity of the combinations themselves. Thus, if we attentively consider the act of *walking* in man, we shall find that there is scarcely a muscle of the trunk or extremities which is not actually concerned in it, some being engaged in performing the necessary movements, and others in maintaining the equilibrium of the body, which is disturbed by them.”

Do we dream ? or does there really exist such an animal as a porpoise—which, devoid of “ prehensile extremities capable of being applied to a great variety of purposes ;” without “ the capacity of maintaining the erect posture ;” wanting in *every* feature described by Dr. Carpenter as indicative of a large cerebellum—yet claims the distinction of being the only animal smaller than man, which possesses a cerebellum equal in absolute size to this *erect biped's*, and vastly larger when compared either with the body considered as a whole, or with the size of the cerebrum.

Now I venture to say, that no such transparently fallacious assumption can be pointed out in Gall's writings, as, has thus been tacitly accepted without protest by the physiologists of Europe, and allowed

to form the staple article of their faith as to the functions of the cerebellum for the last third of a century.

The advent of Gall broke up the long night of darkness and error as to their own being, under which the human race had slumbered for ages. Sensation, perception, memory, judgment, imagination—the idola of the past, the stock properties of every psychological system from that of Aristotle downwards, instead of being primitive faculties, were clearly demonstrated, by the most masterly analysis, and the most unanswerable arguments, to be simply different degrees or consecutive modes of action, proper to each of the elementary intellectual faculties, and necessarily variable in strength in relation to subjects—specifically distinct. Gall studied the maximum or minimum exhibition of certain passions or capacities, compared with the extreme or defective development of certain parts of the brain, and when a vast number of concurrent experiences had satisfied him of a connection, named the primitive faculty by the simplest words indicative of its function to be found in the vocabulary of everyday life. He thus replaced the phantoms of the metaphysicians, which explained nothing, by terms which speedily asserted their vitality by being constantly heard in the mouths of the people, to assist them in defining and describing their fellow men, thus at once obtaining that sanction from the spontaneous dictates of popular common sense, which is the surest test of the truth of all fundamental ideas.

Dr. Gall himself, ascribed his discoveries to his having given himself ingenuously and unreservedly to the study of nature free from the bias of preconceived opinions and ideas, and without seeking to make his observations square with some *à priori* constructed system. Now it is characteristic of the labours of the true naturalist, the careful observer and honest interpreter of nature, who chronicles her aspects faithfully; that they possess an intrinsic value for all time, and ever remain a solid basis on which succeeding students may carry to a greater height the pillar of human knowledge. What then can Dr. Hunt mean, by stating that the discoveries of Gall have fallen into a “nearly hopeless and chaotic condition?” In the amount of work of the nature of discovery, he accomplished, Gall stands altogether unrivalled, and it is difficult to discern how he could have done more for the success of his doctrines, unless he had had the power of bequeathing to the world his genius, his industry, and his truthfulness.

There was in Gall a breadth and massiveness of intellect, a certain grandeur and nobility of character, which placed him beyond the reach of the jealousies of his contemporaries. The craving for instant appreciation, which besets smaller minds, was to him unknown. He always entertained a due sense of the dignity and importance of his re-

searches, and, confident of his place in history, never allowed his equanimity to be discomposed by the misrepresentations of which he was the object.

"My views of the qualities and faculties of man," says Gall, "are not the fruit of subtile reasonings. They bear not the impress of the age in which they originate, and will not wear out with it. They are the result of numberless observations, and will be immutable and eternal like the facts that have been observed, and the fundamental powers which these facts force us to admit." "Here, then, terminates this work, which for fifteen years the public have been impatiently expecting. I should have wished to defer it still longer to bring the fruits of my researches to greater maturity; but the final hour draws near, and I must be content with leaving this first effort on the physiology of the brain far less perfect than it will be fifty years hence." "If I had been a man to be gratified with a little temporary *éclat* I should have yielded more than twenty years ago to the desire of publishing the first views of a physiology of the brain; but I am prouder of the discovery of the slightest truth than the invention of the most brilliant system."

The great principles established by Gall, of the dependence of mind upon organisation, and the specialisation of the organs, have pervaded and leavened the mind of the age—written themselves in our jurisprudence, modified our views of education, given precision to our treatment of insanity, flavoured the novel, coloured the poem,—whilst thousands of intelligent men in England and America are believers in his doctrines, and avail themselves of their teachings in the practical business of life. That they are still rejected, misrepresented, and vilified by those who claim to represent the orthodox science of the day, far from being strange, is, I apprehend, quite "*en règle*," and merely illustrates some very familiar facts. In the great majority of mankind the strength of the feelings so vastly preponderates over that of the intellect, as to incapacitate them as judges on any subject on which the animus of class prejudices, has once been rooted in their minds by their teachers in early life. At all periods, the number of persons capable of thinking for themselves is infinitely small, and out of these, many are ready to follow science under the wing of the orthodox authorities of the day, reaping fame, and honour, and profit, and social position, who are not ready to sacrifice all these considerations—shall I say advantages—and embrace the martyrdom of ridicule, contumely, and neglect, in the cause of truth. However sad the reflection, it must be admitted that Truth in the England of to-day does not pay.

There are, however, exceptional circumstances to account for the opposition Phrenology has encountered, which fully explain the exceptional bitterness and animosity with which it has been attacked. Men with little minds, little heads, but great vanity, rebel against a

standard of capacity which gauges them correctly. Again, the whole of the genus humbug, the empirics and the impostors of the day, and men conscious of being at bottom thoroughly dishonest and unprincipled, instinctively recoil from a system which threatens to unmask their moral deformities to the eyes of the world, and reveal their true features despite a whole wardrobe of trappings of duplicity. Napoleon boasted of having greatly contributed to put down Gall. His own medical attendant, Corvisart, one of the greatest physicians France ever produced, was an admirer of Gall, and vainly endeavoured to introduce him to the Emperor. "Corvisart," says Napoleon, "was a great partizan of Gall, and left no stone unturned (*fit l'impossible*) to push him on to me, but there was no sympathy between us." In short, Napoleon confessed he felt the greatest aversion for those "who taught that nature revealed herself by external forms." Shortly before the announcement of Gall's discoveries startled the Parisian scientific world, the Institute had summoned courage to ask the first consul's permission to award a prize medal to Sir H. Davy, for his brilliant discovery of the metals of the alkalis. Consent was granted, but the soreness of national defeat rankled deeply within, and upon his hearing shortly after, that the greatest of his comparative anatomists had attended Gall's lectures, he broke out furiously at his levy, and berated the wise men of his land for allowing themselves to be taught chemistry by an Englishman, and anatomy by a German. "He scolded sharply," says Gall, "those members of the Institute who had shown themselves enthusiastic about my new demonstrations. This was the thunder of Jupiter overthrowing the pigmies. Immediately, my discoveries became nothing but reveries, charlatanism, and absurdities, and the journals were used for throwing ridicule—an all-powerful weapon in France—on the so-called bumps."

Dr. Hunt saddles Dr. Gall and his followers with being responsible for the limited acceptance of their science, which he states to be "the result of, in the first place, insufficient foundation, and in the second dogmatic teaching." The "insufficient foundation" should be demonstrated instead of asserted; but admitting it to be true—for the sake of argument—who are so responsible for the circumstance as the party with whom Dr. Hunt identifies himself, the professional anatomists and physiologists? These industrious cultivators of science have turned their special opportunities to such good account, that, half a century after the discovery, and the announcement of the fact by Gall, they have just found out—apparently, to their great astonishment—that there really is a relationship between certain convolutions of the under surface of the anterior lobe of the brain reposing on the roof of the orbit, and the faculty of articulate language.

Strange to say, however, whether to excuse the long blindness of which they stand self-convicted, or from a misgiving that the public may begin to suspect that they have been greatly misled by these orthodox authorities as to the truth and value of Gall's researches; with singular bad taste, they signalise their conversion by depreciatory nibblings at the fame of the great master, and by deprecating the supposition that the occurrence forms any ground for believing in the probability of his other discoveries.

As to the charge of "dogmatic teaching"—if a perpetual inculcation of the necessity of collecting facts, and a steady refusal to submit their doctrines to any other arbitrement—in short, a never ceasing, though ever fruitless, call upon their opponents to bring forward observations, in lieu of reasonings and assumptions—be evidence of dogmatic teaching, then Dr. Gall and his followers must plead guilty. But let us listen to the teaching of the accused, and hear the words of Gall, couched in the clear and forcible language, which so unmistakably tells the tale of energy of brain.

"Whoever is not impelled by an innate instinct of observation; whoever finds it hard to sacrifice his opinions and the views he has derived from his earlier studies; whoever thinks more of making his fortune, than of exploring the treasures of nature; whoever is not fortified by inexhaustible patience, against the interpretations of envy, jealousy, hypocrisy, ignorance, apathy and indifference; whoever thinks too highly of the force and correctness of his reasoning, to submit it to the test of experiments a thousand times repeated, will never do much towards perfecting the physiology of the brain."

This is Gall's dogmatism; that of his accusers consists in doggedly refusing to take the direct road to knowledge he so clearly pointed out, and persistently confining themselves to suppositions, reasonings, and opinions, garnished with a few occasional flourishes on the "*true scientific method*," the preaching of which they appear to think a satisfactory substitute for its practice. The study of nature is evidently uncongenial to their minds, and, in lieu of observations, and the testimony of facts, instead of "I have seen," we get, "I entertain a strong persuasion,"—"from inquiries I have made,"—"the fact seems to be,"—"if I am not mistaken,"—"it would rather seem probable," &c., &c.

This is, no doubt, easier than collecting facts, by all the difference between talking and doing; but, unfortunately, like the former, establishes nothing, but leaves the work still to be done. In short, the charge of dogmatism does not attach to those who record their observations of nature, and invite the co-operation of others, but to those who indolently, and arrogantly assume such observations to be erroneous, and treat them with ridicule and contempt. Dr. Hoppe, of Copenhagen, Mr. Crook, and Mr. George Combe, independently arrived

at the conclusion that the portion of brain lying under the zygomatic arch is the seat of the instinct to take food. During twenty years that I have observed the development of this portion of the brain, I have never seen a case where a great depression in this region was not accompanied with more or less weakness of the digestive functions, and I entertain no more doubt of the connection than I do of my own existence. How are we adequately to realize the intellectual torpor of a man in the daily practice of the medical profession, hearing the statement that such an important means of diagnosis exists, yet not taking sufficient interest in the question, to make a single observation to determine the truth, but apathetically resting in preference in the assurance, born of the prejudices of his teachers, that phrenology is all humbug? and who I ask are so responsible and so much to blame as the orthodox professors of Anatomy, Physiology, and Medicine, for the "inadequate appreciation" of Gall's discoveries by the existing generation?

Amongst other objections brought against Gall's discoveries by those who prefer theory and speculation to observation, it is argued that the organs are more numerous than is necessary, and that a smaller number of primitive faculties would suffice by their combination, to produce all the varieties of character we behold in man. I believe that just the reverse is the fact, and that analysis requires, and that observation will ultimately prove, that many require subdivision. To take the "organ of Love of Approbation," for example, shall we conclude that the same portion of grey matter originates the "desire of notoriety or distinction," and the "desire of pleasing"? I think not. Again, with regard to the functions of the "organ of Secretiveness"—I meet with some individuals who instinctively suppress the outward manifestation of the thoughts and emotions that arise in their minds, are habitually shy and reserved, and dislike even being looked at, who yet have no tendency actively to employ deception as a means to attain their ends. Other individuals, on the contrary, who have no shrinking from publicity, instinctively resort to deception as the readiest weapon to their hands in fighting the battle of life, and unless restrained by moral considerations, are profoundly treacherous, and lie from instinct. The first faculty is a defensive one, the latter an aggressive. According to my observations the former class are characterised by the large development of the portion of brain lying above Destructiveness, and now marked Secretiveness in the busts sold in this country; the latter by the prominence of the region immediately before Destructiveness, directly at the spot where the upper part of the front of the ear loses itself in the cheek.

No doubt much remains to be done, before we shall possess a strictly philosophical analysis and classification of all the primitive faculties, and their mutual relations, but this by no means lessens the truthfulness and value of the mass of facts and luminous deductions, for which we are indebted to the genius and industry of Gall. For instance, Gall's disciples know as surely as they know any fact in Natural History, that a portion of the anterior lobe lying on the roof of the orbit, is connected with the talent for philology, and that another portion, at the corners of the forehead, bestows the capacity for music, and such knowledge has a substantive value, although we are not able to define the exact boundary of the tract of neurine which, considered as a whole, has the function of cognising the peculiar qualities of sound appreciable by man,—as articulateness, timbre, pitch, and some others—or even to demonstrate what is doubtless the case, that the organ of articulate language, and that of music or pitch, are continuous with each other, and the rest.*

We see, however, that the general law, that the organs most indispensable to the well-being of the animal, are placed nearest the base of the brain and the mesial line, holds good with regard to the subdivisions of sound, and thus the more essential organ of articulate language is seated below, and within, the comparatively ornamental faculty of music.

It has never yet fallen to my lot to hear anyone declare, that after qualifying himself to judge of the development of the organs by the requisite study, the result of careful examination convinced him that there was no connection between the primitive faculties and the localities assigned to them by Gall; nor can I conceive such a result possible with a person of average intelligence and caution. As far as my experience goes, the reason assigned for disbelief, is invariably the authority of somebody else; some apocryphal tale, or the old threadbare stock objection so often refuted, and so intrinsically silly, of the frontal sinus, and the want of parallelism between the tables of the skull—an objection which, as it presents an exact parallelism in point of absurdity, with avowing a disbelief in astronomy, on account of the aberration of light, or the unavoidable errors in optical instruments, is quite unworthy of serious refutation. In short, it is perfectly clear and palpable that those who reject phrenology do not reject it on account of "insufficient evidence," because they do not examine the evidence already in existence. No! the real cause is the

* As far as my observations have gone, and the fact is worthy of note, in all great musical composers, Language, as well as Music, is large; indeed, the whole region of the corners of the forehead, including Order and Number, presents a development much above the average.

intellectual indolence and apathy which prevents their taking this step, and induces them to content themselves with *assuming* its falsehood.

Why, indeed, should those who are in the secrets of nature and able to pronounce *a priori* as to what is true, and what is ridiculous, have recourse to so troublesome and laborious a method of obtaining knowledge as observation?

No one who really desires to arrive at a definite conclusion as to the truth of Gall's discoveries, need remain in doubt from any difficulty in procuring the data necessary for forming a judgment. Evidence abounds, easily attainable, unlimited in amount, decisive in character. Setting aside the direct foundation and unassailable basis of his doctrines—the correspondence between energy of function and local development of brain—the beauty and harmony (so greatly beyond human ability to have devised), revealed in the arrangement of the organs, (more especially having regard to their gradual and isolated discovery), and also the irresistible confirmation of the accuracy of their localities afforded by “natural language,” are alone sufficient to stamp Gall's discoveries with truth, in the eyes of all those capable of appreciating the difficulty, or rather miracle, involved in the adoption of any other alternative.

Tests the most conclusive, from which everything dubious may be eliminated, are within the reach of all. Colour is one of the smallest of the organs of Gall, and the determination of its size presents far greater difficulty than that of the tenfold larger organs of the affective faculties, but it possesses the advantage that the nature of its function renders its manifestation little open to dispute. Every few years I find myself in presence of a new batch of hazy speculations on colour-blindness, in which this imperfection is attributed to some supposed defect in the eye, in utter ignorance of the fact that more than half-a-century before, Gall had clearly shown the defect to be cerebral, and pointed out its exact seat. As there are individuals colour-blind and incapable of distinguishing one colour from another, so, on the other hand, there are painters who excel in the harmonies of colour. Here we have a faculty easily discriminated, both in its positive and negative manifestations. Take the masks of half-a-dozen persons afflicted with colour-blindness, and half-a-dozen painters who excel as colourists, and mix them together, and any tolerable practical phrenologist would have no difficulty in separating the two classes. Now, when such things can be done—done even in the case of the smallest organs—and that they can is notorious, ridicule becomes ridiculous, and doubt, a sign of feebleness of mind.

Individuals to whom such facts do not carry the conviction of

logical sequence and connection, may be perfectly qualified to rank under Plato's definition "*animal implume bipes*," but they assuredly lack that nobler characteristic of the genus *Homo*, the gift of reason.

T. SYMES PRIDEAUX.

THE WEIGHT-PROPORTIONS OF THE BRAINS OF AUSTRIAN PEOPLES, WITH REFERENCE TO STATURE, AGE, SEX, AND DISEASES.

By Dr. A. WEISBACH.*

1. *Stature*.—Among the peoples examined in this respect (Magyars, Czechs, Italians, and Germans), there seemed to prevail a general law, that the cerebrum, compared to the whole brain (encephalon), diminishes with increasing stature; but that the occipital brain (and also the cerebellum alone) increases. As regards the absolute weight, it appeared that, generally, middle-sized persons possessed the heaviest, and short individuals the lightest, brains. But the Magyars formed an exception to this; as among them short individuals had the heaviest, and middle-sized persons had the lightest brain.

2. *Age* influences the brain in males and females in an inverse mode, in so far as the total weight is, between twenty and thirty, greatest, and then continually diminishes with advancing age, which decrease is divided in the separate cerebral sections, in such a manner that the cerebrum in males becomes, with advancing age, relatively larger, and the occipital brain smaller. In females (German), the total brain-weight is also, between twenty and thirty, greatest, after which time it steadily diminishes; but, with this difference from males, that in the former the cerebrum becomes, with advancing age, relatively smaller, the occipital brain (or the cerebellum and the pons alone) becomes relatively larger.

3. *According to Sex*.—In both nations examined in this respect, namely, Germans and Slavonians, it appears that the female brain is, on the whole, smaller than the male brain, but in the Germans the

* The above are the chief results arrived at by the author, and published in the second and third part of the *Archiv für Anthropologie*, under the title of "Die Gewichts Verhältnisse der Gehirne Oesterreichschr. Völker, mit Rücksicht auf Körpergrösse, alter, Geschlecht, und Krankheiten."

cerebrum is relatively larger, the occipital brain smaller ; conversely, in the Slavonian females, the cerebrum is relatively smaller, and the occipital brain larger, than in the males of both ; moreover, the Slavonian females possess, in comparison with the German females, a relatively smaller cerebrum and a larger occipital brain.

4. The influence of *disease* has been examined in Magyars, Italians, Germans, and Czechs, and it was found that, by chronic diseases, the total weight of the brain is diminished in the three first nations (but strikingly increased in the Czechs) ; which diminution, however, takes place in this mode,—that in the Magyars and Italians the cerebrum becomes relatively larger, and the occipital brain (or pons and cerebellum separately) becomes smaller ; whilst, on the contrary, in the Germans and the Czechs, it is the cerebrum which becomes relatively smaller, and the occipital brain larger.

5. *Nationality*.—*a*. The Magyars have a middle-sized brain which, excepting that of the Rumani and Czechs, exceeds all others (that of the German by eight grammes). Their cerebrum is relatively, and with that of the Czechs also absolutely, the largest ; their cerebellum is, however, excepting that of the South Slavonians, the absolutely, but amongst all, the relatively, smallest ; their pons is of medium size, and the occipital brain altogether the relatively smallest of all.

b. The Rumani (Rumaenen).—After the Czechs, their total brain is the heaviest, about twelve grammes more than that of the Germans. The Rumani have a relatively smaller, but absolutely as large a cerebrum as the Magyars, the cerebrum is of middle size, and so is, on the whole, the occipital brain.

c. The Italians have, of all our peoples, the smallest encephalon, about 25·21 grammes less than the Rumani, a cerebrum of the least but relatively of middle size, excelling in this respect that of the Rumani. Their cerebellum is of less absolute but proportionally of middle weight (somewhat less than that of the Rumani), the pons Varolii is small, and, in relation to the cerebellum, considerably smaller than that of the Rumani ; their occipital brain is, with that of the South Slavonians, absolutely the smallest, but relatively of medium size and but little less than that of the Rumani.

d. The Poles have an encephalon of medium size, intermediate between that of the Magyars and Germans. They have, along with a medium-sized cerebrum, a relatively small occipital brain, the cerebellum in proportion to the cerebrum, being, after that of the Magyars, the smallest ; but the pons is, in every respect, after that of the Slovaks,—the largest.

e. The Ruthenes. The weight of the encephalon equals that of the Poles, being under that of the Czechs, but exceeding that of the

Slowaks and South Slavonians. The cerebrum also equals in weight that of the Poles, being relatively, however, a little less ; but their cerebellum is somewhat larger than that of the Poles (by about 1.47 gramme) ; the pons is small, so that the occipital brain is somewhat larger than that of the Poles.

f. The Slowaks. The encephalon is of medium weight, greater than in the South Slavonians and Italians, but less than in others, approaching nearest to that of the Germans. Their cerebrum has of all the above nations, the relatively smallest weight ; their occipital brain has the relatively greatest weight, which latter is only exceeded by that of Slavonian females, their cerebellum equals that of the Rumani and Germans, but is relatively larger than in all other nations, and their pons is absolutely and relatively the largest among all.

g. The Czechs are distinguished by their encephalon possessing the greatest weight ; exceeding that of the Germans by 53.81 grammes, that of the Magyars by 45.45 grammes, and that of the Rumani by 54.33 grammes. Their cerebrum is also the absolutely largest, but compared with the whole brain only of medium size, but among the Slavonian people's the relatively largest. The weight of the cerebellum is also the absolutely largest, but in relation to other parts of the brain only moderately large, equalling that of the South-Slavonians. The pons is of medium size, and relatively small, so that the occipital brain on the whole has absolutely the greatest, but relatively only little weight.

h. The South-Slavonians. Their encephalon is of small weight, the smallest after that of the Italians. Their cerebrum is, however, in relation to the encephalon, of medium size, being in this respect only superior to the Magyars and Czechs. Their cerebellum is absolutely the smallest of all, but comparatively of medium size. Their pons is the smallest ; hence the occipital brain is absolutely and relatively very small.

i. The Germans (males). Encephalon of medium size, exceeding only that of the Slowaks, South Slavonians, and Italians. Cerebrum relatively small, like that of the Rumani and the Slowaks ; cerebellum, the largest after that of the Slowaks ; pons of medium size, but smaller than in the Slowaks, Poles, and Magyars ; the occipital brain is next to that of the Slowaks, the relatively largest among all males.

On comparing the peoples of the four families represented here, we find that the Slavonian family possess the largest encephalon, the Romanic the smallest, and that the intermediate Magyars possess a more weighty encephalon than the Germans, which are nearly equal to the Romanic stock. We find further that the cerebrum is relatively

largest in the Magyar stock, so that it is less in the Slavonian, still less in the Romanic, and least of all in the Germanic stock. On the other hand, the occipital brain, or the cerebellum alone, is largest in the German, less in the Romanic, still less in the Slavonian, and least in the Magyar stock. The pons is largest in the Magyar, and smallest in the Romanic stock ; but has in the German a relatively greater weight than in the Slavonian family.

ARCHAIC ANTHROPOLOGY AT THE SOCIETY OF ANTIQUARIES.*

ANTHROPOLOGY, forming as it does a sort of central science, around which the other sciences cluster, contributes its aid to, and receives contributions in return from, the followers of all of them. No scientific society which really does its work can fail to have laid before it, in aid of its special objects, papers that are really anthropological. Such papers have the more interest, to the professed anthropologist, that they possess a certain local colouring.

These considerations lead us to draw attention to the more recent publications of the parent Society of Archæologists, the Society of Antiquaries. To it Mr. Frere contributed, seventy years ago, his account of the Hoxne find, and it has been of late years a favourite depository for recitals of the discoveries of archaic anthropologists. We recognise it gladly as a society "which really does its work."—During the past few years, its affairs have been managed under very favourable circumstances, and every department, publications, library, and evening meetings, has been kept to a high point of efficiency. This has been due, we believe, to the possession of ample funds, a courteous and accomplished Director, and a zealous and indefatigable Secretary. Mr. Percival and Mr. Watson deserve a great deal of credit, and they will not object to acknowledge that they owe some of the success of their labours to the condition of financial ease, in which the Society has been placed by liberal bequests and benefactions.

The volume of *Archæologia* just completed contains only two papers belonging to the department of archaic anthropology. The first is

* *Archæologia*, vol. xli; *Proceedings of the Society of Antiquaries*, New Series, vol. iii.

Mr. W. M. Wylie's communication of a paper by Padre Gerrucci, on recent discoveries of sepulchral remains at Palestrina, the ancient Præneste. This excellent memoir is accompanied by eleven beautiful plates and several woodcuts, and describes the relics of an early Italic civilisation, in which not only iron, but ivory and amber, were plentiful. The other, by Mr. John Evans, on the stone implements discovered in Lough Neagh, Ireland, is illustrated by a coloured plate, representing several of the forms. These finds are interesting from the great number of objects, including simple flakes, amounting to many thousands, and from the variety of material employed, and they have attracted the attention of many observers.

Among papers not so strictly anthropological, may be mentioned another communication from Padre Gerrucci, through Mr. Wylie, on a very remarkable bronze object, conjectured to have been a votive offering to Faunus Lupercus; and a most learned and valuable paper by Dr. J. Barnard Davis, F.R.S., on Runic Calendars and Staffordshire Clogg Almanacks.

It is, however, rather in the brief notices contained in the "proceedings" of the Society, than in the more elaborate memoirs reserved for *Archæologia*, that we find evidence of the anthropological work it is doing. The completion of a volume of these records enables us to look back upon three sessions of the Society. During that period, it has had laid before it the discoveries of flint and stone implements in Kensington, Norfolk, Devon, Essex, Kent, Sussex, Aberdeen, Orkney, Paris, Pressigny, Dordogne, Denmark, Zealand, Nova Scotia, Jubbulpore, Burmah, Sumatra, and Prince Edward Island. It shared the interest which the Anthropological Society took in the remarkable discoveries of pile-dwellings and archaic skulls in the bed of the Thames made by Mr. Layton at Kew, and it entered with zeal into the question raised by Dr. Thurnam, as to the prevalence in long-barrows of a long type of skull. It welcomed also the periodical accounts which were received from its former Director, Mr. Franks, of the accessions, to the British Museum and the Christy collection, of objects of high antiquity. The rock markings at Sancreed, Cornwall, are figured and made the subject of a communication by Mr. Blight, and many other exhibitions of interest in this department were made from time to time.

That the Society did not, at the same time, neglect those questions which lie more closely within the scope of its ordinary work need hardly be said. The question of the Paston Letters, of Cæsar's landing, and of the Chapter-house at Westminster, will serve as types of the matters in which they have bestirred themselves with effect. We

cordially echo the tone of congratulation in which their President, Earl Stanhope, addressed them at a late anniversary, in allusion to the change of Directors :—"There has never yet been wanting a series of active, able, and learned men by whom the succession inherited from their predecessors in the Society is worthily upheld. Long may it continue to be so ! long may it be said of the Society of Antiquaries as of the winged commonwealth in classic times :—

*"At genus immortale manet, multosque per annos
Stat fortuna domûs, et avi numerantur avorum."*

Some few years ago the Society did not take that leading position respecting Archaic Anthropology, which it has since assumed. Until recently it devoted very few of its sittings to the discussion of these subjects, which are now somewhat absurdly denominated "Prehistoric Archæology."

We hail with great satisfaction the leading position which the Society of Antiquaries has recently assumed in reference to all subjects relating to man's early history. This is as it should be ; all parties should unite in supporting such a course of action. It is advisable, that before persons write papers and books, on what they please to call Prehistoric, they should have some knowledge of what is Historic. A study of British, Saxon, and Roman antiquities is a better preparation for writing on Prehistoric Archæology, than the opening some comparatively modern ruin, and describing the same as Prehistoric, or the representing mere naturally fractured stones or flints as works of art.

The Society of Antiquaries has shown itself both able and willing to discuss every topic relating to the great Science of Archæology, and has never given undue prominence to the discussion of the speculations of the modern school of writers on Archaic Anthropology, calling themselves "Prehistoric Archæologists."

DR. BASTIAN ON THE ETHNOGRAPHY OF CIVILISED PEOPLES.*

SINCE the appearance of the *Anthropology of Primitive Peoples*, by Professor Waitz, no book on that science has been published in Germany containing so extensive an apparatus of learning as Dr. Bastian's *Prolegomena*, and, if we say in Germany, we may as well say anywhere, the industry and patience of scientific writers in that country being unrivalled in any other. But these valuable qualities are unfortunately not always coupled with a corresponding degree of lucidity and grasp of thought, which we but too frequently look for in vain in the numerous contributions to science which we receive from our Teutonic cousins. So in this instance, a rich mine of intellectual wealth, a treasure of accumulated facts and careful observations comes to us in a form as unwieldy as it is unattractive. Why that should be so appears at the first glance quite unaccountable; however, a plea is put forward in the preface, which is supposed to explain, or extenuate, the offence. We decline to accept that plea.

Want of time, and want of space, can never excuse want of arrangement, and want of clearness; nor is it likely that the results of Dr. Bastian's studies will ever be proportionate to his labour and capacity, unless he brings them before the world in a more artistic shape. There are no chapters in this book, no paragraphs, no well marked sections of any kind; three hundred closely printed pages, but no indication whatever to guide us as to the relation in which they stand to each other! The thread of thought becomes continually broken through by copious foot-notes, relevant though they be to the subject under discussion. All this is rather unpleasant; still, he who will work his way patiently through this work, is not likely to regret it; there is in it solid proof, not only of the industry, but also of the philosophical mind of the author, and of his capability for the task he has set himself.

Darwinism is making even more rapid progress amongst German Anthropologists than amongst ourselves; Dr. Bastian looks upon his science (which he calls Ethnography, although Anthropology would be a more comprehensive term) from a thoroughly Darwinian stand-point; or we had perhaps better say he starts from the point to which Darwin,

* *Das Beständige in den Menschenrassen und die Spielweite ihrer Veränderlichkeit. Prolegomena zu einer Ethnologie der Culturvölker.* Von Dr. A. Bastian. Mit einer Karte von Prof. Kiepert, Berlin. Verlag von D. Reimer 1868.

De Candolle (*Géographie Botanique*), and Nathusius (*Rassen des Schweines*), have brought up the question of persistency of race characters, or characters of species.

It is only natural that many facts to which our attention is directed, many arguments which are brought forward in the course of the inquiry, appear to support the doctrine of Mr. Darwin ; civilisation and its effects upon peoples cannot but show some phases bearing a resemblance to the symptoms observed in artificial breeding ; so we meet (p. 49, *et seq.*) with some observations on this subject, which are well worth attention.

“Nothing more strongly characterises the profound confusion, says Dr. Bastian, and the utter want of all elementary principles in ethnography, than the prevailing opinion of the degenerating influence of mixture on race, whilst it is patent that wherever civilised peoples appear in history, they are but the highest product out of an infinite number of mixtures. Generally the primitive roots of their ethnological genesis go back to prehistoric times, which are far removed from our view ; they (the roots) become known only by their effects when the race in the light of history has grown into a dominant nationality, but every scientific inquiry is at an end if we then want to consider such nationality as a *deux ex machina*, instead of analysing its organic genesis. We talk of purity of race ; breeders consider it of the utmost value to retain the blood of their stock pure, and not to deteriorate it by mixture. So far, so good. But are therefore these thorough-bred races pure races, if by pure is understood primitive and aboriginal ? Is the improved English short-horned breed of cattle the representative of the wild (feral ?) species, or is it not rather a creature grown out of many, and most artificial crossings ? In the race of Berkshire hogs, as it now exists, we find English, Tonquinesian, and Neapolitan elements, which compose this valuable breed, as has been proved by Nathusius. The English race-horse is certainly not the progeny of the wild horse of the Steppe or of the Pampas ; on the contrary, it is produced by careful crossings out of Arab barbs, and English blood in order to provide it with the requisite qualities. The Arab horse also, will be, according to all probabilities, the product of crossings, its origin dating back into a prehistoric period, etc., etc.”

It is not without interest to follow our author in the application to Ethnography of the arguments derived from a careful study of the aboriginal Fauna, and its present state of subserviency to man. The late Dr. Knox would be sadly puzzled by some of the facts brought to bear on the subject of races and anthropogenesis ; his arbitrary classification of the human races, and his dogmatic assertions about human hybridity, are already superseded by profounder and more modern researches ; in the volume before us we meet with a juster appreciation of the persistent characteristics of race, as well as of the modifying influence of surrounding circumstances. Dr. Bastian, and we believe

the best authorities with him, take a middle course, opposed alike to the eccentric teachings of Knox, and to the quiet ignoring of the importance of race in history, so fatal to Buckle's learned and eloquent, yet inconclusive, essay.

Our author follows some notable former writers on the subject, in arguing from an analogy between the elements and compounds in chymistry, on the one hand, and the pure and mixed races of animals, man included, on the other. The argument is very ably sustained, and it tells favourably on the Darwinian theory, although Dr. Bastian is by no means a mere advocate of that theory, or any other ; all facts, whether apparently adverse or favourable, being fully brought forward and impartially considered. Towards the latter part of the book great prominence is given to archæological, mythological, and linguistic inquiries, showing an astounding amount of reading, as well as original research and travel. The information on those points is very complete, and we approach thereby the question of race from another road that may yet open up vistas hitherto little thought of. The light, which by recent investigations is shed on the intercourse between the Icelandic discoveries of Finland and the aborigines of Northern and Central America, is likely to demolish many theories boldly advanced, many notions still tenaciously defended about the Aztecs, Mexican architecture, inscriptions, etc., etc. We recommend this part of the book to the students of comparative Mythology and Philology ; they will find in it more than they look for.

A map, which is drawn up with the assistance of Professor Kiepert, forms a very valuable and welcome addition to this little volume. It shows, in varying colours, the areas occupied towards the end of the fifteenth century by different races and nationalities of the world ; a reproduction of this map on an enlarged scale is a desideratum for all Anthropologists, who are often in want of such a guide on a complicated and difficult subject.

ON THE LOCALISATION OF THE FUNCTIONS OF THE BRAIN, WITH SPECIAL REFERENCE TO THE FACULTY OF LANGUAGE.

By JAMES HUNT, PH.D., F.S.A.

(*Historical part continued from p. 345, vol. vi.*)

AMONG the writers of the sixteenth century we meet with an anthropologist, who deserves even more space in these pages than we can here afford him. We allude to Juan Huarte, the author of that re-

markable work entitled *An Examination of Geniuses for the Sciences, showing the difference of aptitudes among men, and what sort of learning would suit best each genius*.*

Huarte certainly was not a scientific anatomist, in the present acceptance of the term; but he was a man of great erudition, an original and bold thinker, a keen observer, and not merely a speculative but a practical philosopher. It is not our intention to give here a complete analysis of the work in question; we shall merely give such extracts as will show that Huarte was one of the first who forcibly pointed out the intimate connexion of mental phenomena and the body, and boldly and distinctly proclaimed the brain to be the organ of thought. When we take into consideration the century and the country in which Huarte wrote, we marvel at the boldness of the man who, with the eyes of the Spanish Inquisition upon him, dared to evolve even the character of Christ from the spurious description of his physical organisation, attributed to P. Lentulus, the proconsul of Jerusalem. To show at once "what manner of man" we have before us, we extract from the work a passage on authors and scholars, whom the author compares to sheep and goats, evidently ranging himself among the latter.

"The goat does not like the plain, but prefers rocks and hills, which it climbs, and looks down into the abyss; it leaves the herd and the trodden path. The rational soul, dwelling in a well-organised and tempered brain, possesses the same qualities; it proceeds onward to discover new things. On the other hand, there are people who do not imagine that there is anything more to be discovered in the world. They have the character of sheep, which never leave the herd nor the trodden path. Amongst scholars, some are bold, and care little about received opinions; they do everything in their own way, speak their thoughts freely, and are their own guides. The others are timid, humble; they swear by the words of some great authorities; they follow them, and deem their opinions as incontrovertible truths, which alone deserve faith; whilst they hold what others say to be whims and lies. These two kinds of geniuses are, taken together, very useful. For as shepherds generally put to a great flock of sheep about a dozen goats, to render the former lively, and show them the way to new pastures; so must there be, in human sciences, some inventive minds, which show to the sheep new wonders of the creation. It is in this way that science is developed, and in this way the knowledge of man increases daily."

One of the leading ideas, which pervades the whole work, is that man is just what nature made him; that, therefore, we must study the nature of each man to learn what he is fit for. If you send a brute

* "Examen de ingenios para la Ciencias, donde se muestra la diferencia de habilidades que hay en hombres y el genero de letras que à cada uno responde en particular." Pampluna, 1578.

to Rome, a brute will return; or as he has it, *Quien bestia va á Roma bestia torna*: "it will as little avail him to go to Salamanca, if he brings no intellect with him". Huarte, therefore, in his dedication to the king of Spain, proposes,—

"That the universities should examine whether those who present themselves to study logic, philosophy, divinity, law, etc., possess the requisite aptitudes for either of these sciences; otherwise, apart from the injury that such a one may afterwards do to the commonwealth by practising an art wherein he is not skilled, it is melancholy to see a man take pains and rack his brains about a matter whereof he cannot reap any advantage."

Another leading idea is that the mental operations of man depend on the condition of his corporeal frame. "It is," as he observes, "against all natural philosophy, to believe that the rational soul, being in the body, can operate without the mediation of her corporeal instrument." He rejects the theory of ancient philosophers, that the heart is the chief seat of the soul. "It is true," he adds, "that in many passages of the sacred scriptures, the heart is styled the superior part of man; but this is merely an accommodation to the way of speaking in use at the time. Experience and reason have proved that the brain, and not the heart, is the chief seat of the rational soul." In accordance with this opinion, he observes:—

"When God formed Adam and Eve, it is certain that before he filled them with wisdom, he instrumentalised their brain in such a manner that they might receive it with ease, and serve as a proper instrument, therewith to be able to discourse and to reason."

Although Eve was made by God as perfect as any of her sex can be, yet is it an undoubted fact that woman is inferior in intellect to man. The cause evidently is that the composition and temper of her brain are differently disposed.

In chapter I, he proves, by an example, that if a child have not the disposition which is requisite for a certain science, the best school-master will lose his labour. We almost fancy we read the biography of Gall in the following passage:—

"I am myself a good witness to this truth. There were three companions of us, who entered together to study Latin. One of us learned it with great facility, the rest could never make any commendable composition; but passing on to logic, the one who could not learn grammar, excelled in that art. Then all three coming to hear astronomy, it was a matter worthy of note, that he who could learn neither logic nor grammar knew, in a few days, more astronomy than the master who taught him. I then greatly marvelled thereat, and found that every science required a special and particular aptitude."

Assuming thus that nature alone makes man able to learn, he inquires (chap. iii):—

"What part of the body ought to be well tempered, that a young man may have ability. No one doubts," he says, "that the brain is the instrument ordained by nature to the end that man might become wise and skilful. Four conditions ought the brain to enjoy, that the rational soul may perform the works which appertain to understanding and wisdom. 1. Good composition; 2. that the parts be well conjoined; 3. that the heat exceed not the cold, nor the moist the dry; 4. that this substance be made of parts subtile and delicate. The brain should be well formed, and of sufficient quantity. The four ventricles should be distinct and severed, each in its proper place, and of appropriate capacity."

"Galen," he continues, "infers the good figure of the brain from the outward shape of the head, which," he says, "ought to be such as it would be when we take a round ball of wax and compress it a little on the sides. The forehead and occiput will then present projections. Hence, it follows that the man who has his forehead very plain, and the back of his head very flat, has not his brain so figured as is requisite for wit and ability."

Speaking of the quantity of brain, he observes: that none of the brutes have as much brain as man; and that animals approaching man in wisdom and discretion (dog, ape, fox), have a greater quantity of brain than other animals with larger bodies. Galen says, that a little head in a man is ever faulty, because it is deficient in brain. This, says Huarte, is not always the case. A big head affords no positive proof of a large brain, as the size may be owing to the thickness of the bones and the quantity of flesh; in the same way as we find big oranges with such hard and thick skins, that they contain but little juice.

The soul, in order to produce different effects, must act by special instruments. This is shown by the different structure of the external organs of sense; we may hence conclude as to the internal senses. If, then, it be true, that every kind of work requires a special instrument, it necessarily follows that within the brain there must be one organ for the understanding, one for the imagination, and another, different from them, for memory; for if all the brain were organised after the same manner, either the whole would be memory, or the whole understanding, or the whole imagination. But we see that these are very different operations, and therefore it is clear that there must be a variety of instruments.

But, when we open the skull, we shall find the whole composed of the same substance, only there appear four little cavities. Galen and other anatomists have endeavoured to find out the truth, but none of them have precisely stated the function of either of these ventricles. They only affirm that they are workshops (which some doubt) where the vital spirits are digested and converted into animal spirits, to give sensation and motion to other parts of the body.

Huarte dissents from this theory, and thinks that the fourth ventricle alone has the office of digesting and altering the vital spirits; for which reason nature has severed it, and placed it at a distance from the others, and made that part of the brain a separate portion.

He doubts not that the three ventricles placed in the forepart are intended by nature to no other end than to discourse and philosophise, which is apparently proved by the fact that in severe study and contemplation it is always this part of the head that is aggrieved.

But the difficulty is to know in which of these ventricles is seated memory, or imagination, or understanding. He comes to the conclusion that, in as much as the understanding cannot act without memory, nor memory without imagination, all these powers reside in each ventricle. But, if so, it may be asked to what end has nature made several ventricles, as one would suffice for the performance of all. He answers, for the same reason that nature has made two eyes, and two ears, so that when one fails the other may act. Thus, in palsy, the action of one ventricle may be lost, and yet memory, understanding, and imagination, though weaker than before, may remain, which clearly shows that these faculties reside in each ventricle.

In chapter iv he shows that when the brain becomes heated, a man may become eloquent and wise. Among other cases he cites that of a rude country fellow, who, becoming frantic, made a very eloquent discourse in his presence, with so many flowers of rhetoric, and such apt choice of words, as if Cicero had spoken in the presence of the Senate. This person, when in health, had nothing to say.

But this, he adds, is nothing compared to the case of a page in the service of a grandee, who, whilst he was mad, delivered such rare conceits, and devised such excellent modes of governing the kingdom, of which he imagined himself to be the sovereign, that his master rarely left his bed, and prayed God not to restore him to health. It seems, however, that the page was cured by a physician, who, when he claimed his fees from the master, received the following answer: "I was never more aggrieved; of one who was wise and well advised you have made a fool again." Nor did the good doctor fare better when he applied to his former patient, who also deplored that he had been cured.*

On the intellectual faculties Huarte observes as follows: Memory and understanding are faculties essentially different. Memory is only

* This anecdote has given rise to a ludicrous mistake on the part of D. Seligman. In his *Sciagraphia Virium Imaginationis*, he writes, Huartus, Hispanus, se regem in delirio arbitratus prudentissimos de regimine faciebat discursus: Huartus is thus considered to have been mad himself, whilst he only cites the above case. Willis (see *infra*) also quotes the case incorrectly.

a passive faculty, depending on certain qualities of the brain, such as moisture and softness, which render the brain fit to receive what the imagination, by means of the senses, has perceived. Memory is to the imagination what white paper is to the writer. What is contemplated by the imagination with attention, is deeply impressed upon the memory, what is only superficially viewed is easily forgotten. In the same way as a writer, who carefully delineates his letters, renders his writing legible, so the imagination, in order that each image should long and legibly remain in the brain, must carefully impress it in the brain, otherwise, the image will be scarcely perceptible; as happens in old manuscripts, in which some parts are obliterated by time, and others are distinct. In the same way, some images may remain in the memory, whilst others are effaced. Memory and understanding are not merely different, but opposed faculties. The understanding requires a dry brain, the memory a soft and moist brain. Young persons have a good memory on account of the softness and moisture of their brain. In old age the brain substance becomes so hard as to be incapable of receiving impression. Hence young people are deficient in understanding, in which old persons excel, for the understanding requires a dry brain. Women, like children, having softer brains, are inferior in understanding to man. He even goes so far as to assert that men possessing a prodigious memory, are deficient in understanding, and *vice versa*. There is also in this work a curious chapter on the mode of begetting strong, wise, and virtuous children, male or female, which we do not think it necessary to touch upon.*

Huarte's work naturally provoked much criticism. To those of his contemporaries, who complained that they had in vain sought in his book for the chapter which was to reveal to them their aptitudes, he simply replied, that he was not obliged to give wit to those to whom

* Juan de dios Huarte, Navarro, was, as he tells us himself (natural de San Juan de pie del Puerto) born about 1525, at St. Jean-Pied de Port, a little town in Navarre, then belonging to Spain. Nothing certain is known about the year of his death. He studied medicine at Huesca, in Aragonia, then a flourishing university; he probably, also, attended lectures at Salamanca and Alcala. He then seems to have settled at Huesca, where he died, about the end of the sixteenth century. Some say that he died in Madrid. Huarte appears to have finished his work in 1557, but only published it in 1575. The earliest edition we have seen is that of 1578. The work soon created a great sensation in the literary and scientific world, and was translated into most European languages. In Germany it became known by the name *Scrutinium Ingeniorum*, a Latin translation, by Æschasius Major (Jochim Cæsar), Leipzig, 1612. In English, there are two translations, one by Carew, *The Examination of Men's Wits*, etc., London, 1616, and another by Bellamy, *The Tryal of Wits*, etc., 1698. Several translations appeared in France. The earliest translation we know of is that by Camilli, Venet., 1586, from which Carew made his translation. Finally, Lessing translated the work into German in 1752, and gave it the title *Prüfung der Köpfe* (an Examination of Heads).

God and nature refused it. There is, however, one critic we must mention who wrote a formal refutation of Huarte, in the shape of a book double the size of Huarte's work. This book is entitled, *An Examination of the Examination of Geniuses*, by Jourdain Guibelet, physician to the King. It is not our purpose to enter into the merits of this refutation. Certain it is that Guibelet is far inferior to Huarte in originality of thoughts, and power of expression. He belongs, in fact, to the second class of authors described by Huarte. Guibelet is now almost entirely forgotten; his name being scarcely mentioned in any biographical dictionary, nor his book cited in bibliographical works. It is for this very reason that we would rescue from entire oblivion one chapter, at least, of this scarce work, partly because we think it deserves preservation from its intrinsic interest, and partly because it forms what the author intended it should, a supplement to Huarte. The following is the substance of the last chapter of Guibelet's work,* headed, *By what Signs the Character of Children may be known*. This ought to have been the main object of Huarte's book, but, as he has neglected it, or has only slightly touched upon it, Guibelet says, that he would try to give a few rules on account of the importance of the subject.

There is such intimate connection between the soul and its organ the body, that we are able to judge of the mental capacity of children by their face, which has been called the mirror of the soul, and by other parts of the body, when the children are about seven or eight years old. The chief marks, touching the minds of children, are to be found about the head. As the brain is the seat of the faculties, it is reasonable to suppose that *the external head should show what is going on within*, just as the dial outwardly represents what is hidden. We must, therefore, first examine this part and see whether the child has a well formed head. . . . The head should show some eminence in front and behind; because of the ventricles of the brain, in which are seated the *sensus communis*, imagination, and memory. The top of the head should be slightly depressed in the region of the sutures. . . . The hair should be smooth, neither too stiff, nor too black; the face should be rather thin, neither too fleshy, nor too fat; the complexion should be a mixture of white and red. He then proceeds to the conformation of the eyes, "the two windows of the soul," as he calls them. They should be neither too large nor too small, nor too deep seated; they should be bright. The chief characters of a sound mind, he continues, are clearly marked in the face between the eyes, which shine like brilliant stars; the eyes should be azure or sky-coloured.

* *Examen de l'Examen des Esprits*. Par Jourdain Guibelet, M.D., Médecin du Roy à Evreux. Paris, 1631.

The space between the eyes should be a little depressed, rather than raised; Straton thought that there was the seat of the soul. The forehead and the hand are two parts of the body in which are depicted all the powers of the mind. A large and square head, proportioned to the size of the face, shows the force of the faculties, it is a mark of a large brain, and a sign of good sense, and a sound mind.

God has put some marks in the hand, so that each may know what he can do. But all this is not for children, but for grown up men who have a face lean from study, *vultum exercitatum*, as Petronius says, and hands skilled for all kind of work. Guibelet very judiciously adds, it is also from the actions and deportment of children that we can conjecture what they will be. Those who think slowly, but still show vivacity of mind when something interests them, are generally intelligent. This tardiness, age and study will remove, and they will then show what is now hidden. There are some children with vivid minds, ready to say everything, and to do everything. They cause pleasure to the parents, but it is a straw-fire which soon becomes extinct.

It is noteworthy what Fracastor says, that those who have great memory for localities and roads, approach the nature of brutes. The teacher may also by frequently questioning his pupils judge of the state of their intellect.

Michael Servetus, of Villanuova, in Arragonia, born 1509, the discoverer of the circulation of the blood through the lungs, burnt at Geneva as an heretic in 1553, at the instigation of Calvin, must also be mentioned as a localiser of the cerebral functions. He believed that the choroid plexus was the organ destined to secrete the animal spirits; that the true seat of the soul was in the aqueduct of Sylvius; that the two anterior ventricles were destined to receive the images of external objects, and that the fourth ventricle was the seat of memory.*

As will be seen, there is scarcely any part of the encephalon which has not alternately been looked upon as the palace of the soul; none, however, has acquired such a celebrity as the pineal gland, the spot selected by the great reformer of Philosophy, the opponent of Aristotle, namely, Renatus Cartesius (René Descartes, born 1596, died 1650). The chief reasons Descartes gives for assuming that the *glandula pinealis* is the seat of the soul, are the following.† Although the soul is immanent in the whole body, there must be a certain part in which it more specially exercises its functions. This part is not the whole brain, but the pineal gland, which is situated in the middle of the cerebral substance, above the canal through which the spirits of the anterior ventricles communicate with the spirits of the posterior

* *Restitut. Christian.*, lib. v. Vienna, 1553.

† Descartes, *Passiones Animæ*. Amstel., 1664, art. 31, 32, 34.

cavity, so that the slightest motion of that body may change the current of the spirits, whilst the slightest change in the spirits may affect the motions of the pineal glands. We need scarcely add, that the pineal gland is, at present, left entirely untenanted, as regards any intellectual function.

Physiognomy and Cephalonomy are so intimately blended, that we must not pass over two authors of this period, the chief representatives of the above doctrines. The first we shall quote from is *Marian Cureau de la Chambre* (born 1594, died 1669), physician to Louis XIV, and one of the first members of the then newly founded French Academy. Tinged as the works of these writers are with baseless hypotheses, paradoxes, and astrological superstitions, they still deserve the attention of the Physio-anthropologist. The two chief works of de la Chambre are his treatises *On the Art of Knowing Men*,* and *The Character of the Passions*; he was also the author of numerous other works.

The subjoined extracts are from the chapters on the principles of Metoposcopia, in the work *On the Art of Knowing Men*. "The forehead is unquestionably that part of the face which Metoposcopia is most occupied with. The signs are there in great number, and more diversified than anywhere else; hence Metoposcopia derives its name from this spot. When we inspect this confined space, which naturally should be smooth and equal, and yet which presents such a variety of irregular lines, some of which vanish and give rise to others; when we find that some are deeper, others more superficial, some short, others long; that they are not to be found in the same number, or of the same colour alike in two persons; then, I say, that we have reason to believe that there is some secret hidden in man's forehead, unknown to man, and that the impressions upon his forehead are due to nobler and higher causes than the lines we find on the foreheads of animals. It might be said that the consistence of the skin is the cause of this diversity, and in proportion as it is thicker or more supple, the lines are more or less easily formed; but do we not see a vast number of persons whose skin is of the same consistence, yet who have not one line alike? He admits that movement and dryness may contribute to form these lines; but he contends that these lines on the forehead exist already at birth, although they are not then perceptible. We must then attribute the first impression of these lines to a cause outside the body, and as there are incontrovertible proofs that certain planets govern certain parts, so must we conclude that the lines on the forehead are of this order, and they are imprinted

* *L'Art de connoistre les Hommes*. Paris, 1663. *Les Caractères des Passions*, 1658.

by one of these planets. In his opinion, it is probable that the forehead is governed only by one planet, namely, Saturn. We may only add that he considers the nose is governed by Venus, and the lips by Mercury.

The normally greater strength of the right side of the body, a subject which will be again adverted to in the sequel, is thus accounted for by our author. The hands are the chief instruments used by the mind to perfect its inventions, and, no doubt, they give such an advantage to man, that if we cannot say with the ancient philosophers, that man is wise because he possesses hands, we may at least assert that he appears wise because of his hands. Nature has placed them as much as possible near the seat of reason, and the senses with which they are so nearly connected. The right hand is the first in dignity, being more agile and stronger than the left. It is stronger because it has more heat, and it has more heat, not merely because it is on the same side as the right ventricle of the heart, where the blood is hotter and more boiling; not merely because the liver, the source of blood, is nearer to it; not merely because the veins of the right side are, as Hippocrates says, more ample, but also because it is placed on the right side, where all movements should commence. That all movement commences naturally on the right side, is a truth which cannot be contested, when we observe what is going on in animals. Thus, quadrupeds always commence moving with the right forefoot; and bipeds also always put the right foot foremost. We carry burdens better on the left shoulder, so as to leave the movement of the right foot free.

The second, indeed the most prominent representative of Cephalonomy and Physiognomy of the seventeenth century, is an Englishman, namely, Richard Saunders, the very prototype of Gall and Lavater. Many of the axioms laid down in this singular and scarce work,* from which we take the subjoined extracts, will be found closely resembling the fundamental principles as laid down in modern phrenological works, as the following passages will abundantly show.

"Now, in our science of Physiognomie, the form, the proportion, and dimensions of the head are to be considered; for by it, and its form, we judge of the mind contained therein.

"A little head is never without vice, and most commonly, is guilty of little wisdom, but rather full of folly, which is naught and malicious.

"The best form of a head is moderate, as greatness and thickness, and of a decent and convenient roundness, which, before and behind, is tempered with a little depression. . . .

* *Physiognomie, Chiromancie, Metoscopie*, etc. By Richard Saunders, Student in the Divine and Celestial Sciences. London, 1653.

"The brain, one of the noblest parts of the body, is according to the form of the cranium ; for if the cranium be corrupted, the brain is so too. The head of man has proportionately more brains than all other living creatures ; and men have more brains than women ; and the head of man has more joynts than any other creature. So the well-formed head is like a mallet, or sphear, there being some eminence before and behinde ; the form of the middle ventricle should be a little compressed, so the cogitative faculty is the more notable. If the forepart be depressed, the man is of no judgment : if the hinder, he has no memory. . . . When the head is big, proportionately to the body, the sinews of the neck big, and the neck itself strong, it is a sign of strength, choler, magnanimity, and a martial humour. . . . A head having the middle ventricle somewhat compressed towards the side, denotes the cogitative faculty, natural diligently comprehensive, rationative, and eloquent, which proceeds from the union of the spirits that are in that place ; those who have a head thus are learned and knowing. The head, very little, is necessarily an evil sign ; and the less it is, the more folly there is."*

In chapter eight, which treats of Metoposcopy or the signification of the forehead, the author illustrates his views by fifty woodcuts of heads, in which the lines on the forehead and its form betray the disposition of the individual, "according to the most accurate and exact observation, which being as an epitomy of the whole doctrine, may delight the reader." Some lines denote the character of a simple honest person, others denote a murderer, a thief, a prattling loquacious person, cowardice or courage, meekness and impudence.

At this period general human anatomy was already comparatively in an advanced state ; but the anatomy and physiology of the brain and nerves was still vague and meagre in the extreme. There can be no doubt that Thomas Willis occupied the foremost rank in the seventeenth century as a cephalotomist and neurologist. His great work "*On the Anatomy of the Brain and the description and use of the Nerves*,"† although published more than two centuries ago, forms still the foundation of modern neurology. Willis was the first who perceived the great advantage of comparing the human brain with the animal brain, and he arrives at the conclusion now generally admitted—that man's intellectual superiority was greatly owing to the depth and extent of the cerebral convolutions. He attached great importance to the grey substance as generating the force of which the medullary matter is the distributor. This is not the place to enter into his great merit of having introduced a new method or, at all events, a uniform method

* Part II, chap. vii, p. 158, *et seq.*

† *Cerebri Anatome ; cui accessit nervorum descriptio.* London, 1664.

of dissecting the brain, which before him was performed downwards and upwards and in different directions ; nor shall we say any thing about his tracing the origin of the cranial nerves, and their classification, by which he introduced order where till then the greatest confusion obtained. What concerns us here is this, that Willis considered not only the brain as the organ of the rational soul, as the origin and source of all conceptions, but that he assigned to different parts of the brain different physical and mental functions.

In his Preface to the Reader, after stating that he felt ashamed of having drawn out for himself and his auditors a kind of poetical philosophy and physics consisting of conjectures, he came to the determination not any longer to pin his facts on the received opinions of others, nor on the guesses of his own mind, but for the future to believe nature and ocular demonstration. He consequently, as he states, addicted himself specially to the opening of heads and to inquiring into the offices and uses of the brain and its nervous appendages. The first sentence of chapter i, "On the method of dissecting the brain" is characteristic ; it runs thus : "Among the various parts of an animal body subject to anatomical inquisition, none is presumed to be easier and better known than the brain ; and yet there is none less or more imperfectly understood." The importance which he attached to the comparative anatomy of the brain is shown in the following passage : "That the perfect knowledge of the brain may be gained, it is necessary not only to dissect men's heads but those of all other kinds of living creatures In doing so I shall shew the communities and differences which the parts in question obtain in various animals, compared among themselves and with man. From such a comparative anatomy not only the faculties and uses of every organ, but the impressing influences and secret workings of the sensitive soul will be discovered."

Chap. x. *A description of the Brain and the use of its parts*:—"The brain is accounted the chief seat of the rational soul in man, and of the sensitive in brute beasts ; it is the chief mover in the animal machine and the origin and fountain of all motions and conceptions. *Convolutions.*—In the more perfect animals all the turnings are made of a twofold substance, viz. cortical and medullary ; the animal spirits are wholly, or for the most part, generated in the cortical substance, the medullary part serves for their dispensation. The anfractuons brain, like a plot of ground planted with nooks and corners and danks and molehills, has a far more ample extension than if its superficies were plain and smooth. These folds are larger and far more numerous in man than in any other living creature for the various and manifold actings of the superior faculties."

Willis rejects the theory of the ancients that the animal spirits are

elaborated in the ventricles, or that the supreme seat of the soul is fixed there. He also rejects the theory that the pineal gland is the seat of the soul, or that its chief faculties arise from it, on the ground, "because animals which are almost destitute of the superior powers of the soul, have the glandula large and fair enough." (Chap. xiv; *Anat. of the Brain*.) The sensations he places in the corpora striata; these sensations are represented upon the corpus callosum, as it were upon a white wall, and so induce a perception and a certain imagination of the thing felt. These images, further progressing from the corpus callosum to the cortex and entering its folds, constitute the memory (chap. iv, *On the Soul of Brutes*). As regards motion, Willis considers that the cerebrum presides over voluntary, and the cerebellum over involuntary movements. In a chapter on stupidity Willis remarks:—"It is a common observation that wit and ingenuity depend somewhat on the magnitude and figure of the head, and consequently of the brain. The genuine and best figure of the head ought to be globular; those who have a flat head, or otherwise unproportionate, are for the most part affected with some noted faults of the animal functions, for these kinds of brains, like distorted looking-glasses, do not rightly collect the images of the things nor truly object them to the rational soul. A fever sometimes cures fools and renders them acute. Huarte tells us of a certain man that was a fool at the court of Corduba, who becoming distempered with a malignant fever, came so much to himself that in the midst of disease he spoke with such judgment and discretion that the whole court stood in admiration, and so remained his whole life afterwards one of the most prudent men of his time."

As we cannot believe that Willis embellished this story, we must presume that he took it second hand. He, however, makes an addition of his own experience which is worth recording:—"We ourselves," continues Willis, "have known a certain man of a very blunt Bœotic dull wit, who talks idly, but in fever suddenly brought forth most acute speeches, and seasoned with a great deal of salt and wit. Further we knew a generous old gentleman who, having lost his memory and so the use of discourse, received great help by the distemper of fever happening afterwards."

The great Haller (1708-77*) has also briefly discussed the question of the seat of the soul, for in chapter eleven of his work, *First Lines of Physiology*, he asks, "Is there in the brain any principal part in which resides the origin of all motion, the end of all sensations, and where the soul has its seat? Is it in the corpus callosum?" He comes to the

* *Primæ Linæ Physiologiæ*. Gotting., 1751. *Elementa Physiologiæ corporis humani*. Lausanne, 1757-66.

conclusion that it is not, and that this opinion is opposed by very many facts: birds have no corpus callosum, and wounds in that body are not in the least more mortal than those in other parts of the brain, as appears from undoubted experiments.

Concerning the seat of the soul, he adds, "We must inquire experimentally. In the first place, it must be in the head, and not in the spinal cord. Again, as it appears from the experiment of convulsions arising when the inmost parts of the brain are irritated, that it lies not in the cortex but in the medulla, and, by a probable conjecture, in the crura of the medulla, the corpora striata, thalami, pons, medulla oblongata. Again, by another not absurd conjecture, where the origin of every nerve lies, as the first origins of all the nerves taken together make up the sensorium commune. Are the sensations of the mind represented here, or do the voluntary and necessary motions arise in that place? This seems very probable; elsewhere he denotes the pons as the probable sensorium commune.

The next author who in chronological order claims our attention with reference to the localisation-theory, is Charles Bonnet (born 1720, died 1793). This celebrated philosophical naturalist starts, like Aristotle and Locke, from the principle that our ideas are derived from the senses; that all the manifestations of our physical life are merely the phenomena of nervous and cerebral action, and that the main object of philosophy consists in the observation of the laws of relation between the function of the central organ of sensation and mental phenomena. It must not, however, be inferred, that Bonnet was a pure sensualist, or materialist. On the contrary, he believed in the continuance of the thinking principle after death, and wrote an apology of Christianity,* which has been translated into most European languages, and was so much admired by Lavater, that he forthwith translated it into German, and challenged Mendelssohn either to refute the arguments, or to embrace Christianity. Bonnet must in so far be considered as an organologist, in as much as he considers not only the brain to be an aggregation of numerous faculties, but assigns special functions to each fibre. Every faculty, sensitive, moral, or intellectual, is in the brain connected to a bundle of fibres. Every faculty has its laws, which subordinate it to other faculties, and determine its mode of action; and not only has every faculty its fasciculus of fibres, but every word has its own fibre.

I feel the more induced to give some lengthy extracts from two of this author's noted works,† because that apart from their intrinsic

* *Recherches Philosophiques sur les preuves du Christianisme*. Genève, 1770.

† *La Palingénésie Philosophique*. Genève, 1769. *Essai Analytique sur les facultés de l'âme*. Genève, 1770.

interest, they bear, as will be seen in the sequel, upon the question of loss of articulate speech, in relation to the intellectual faculties. It will also be found that the theory, propounded by an eminent anthropologist and cephalotomist recently deceased (M. Gratiolet) is here anticipated.

Specific Differences of Sensitive Fibres.—Every sense has its own mechanism. Every sense transmits to the soul a multitude of different impressions, followed by as many different sensations. . . .

Imagination and Memory.—The ideas which objects excite in the mind may be reproduced by imagination and memory. Before searching how an idea may be reproduced, we must know how it is produced.

The Mechanism of Memory.—In order to elucidate a little the mechanism of this wonderful faculty, says Bonnet, he had studied the art we are to impress upon our brain, a sequence of sounds, words, a discourse, and he found that this art, so well-known by public speakers, has for its final object to set the sensitive fibres into a motion corresponding to the order of the sequence of words, to which they are appropriated. These fibres intercommunicate with one another, and may acquire an *habitual* disposition to set each other into motion in a determined and constant order. It is therefore by the repetition of the same movements, in the *same direction*, that we succeed in making these fibres contract this position.

Attention, which adds new force to their movement, aids in fixing the sequence of words on the memory. This sequence is then represented in the brain by a chain of fibres and fibrils, along which the movement is propagated in order, the more constant as the memory is tenacious. Memory is attached to the body, since causes which only affect the body, enfeeble the memory, or destroy it; or may be, fortify it. How many facts in medicine have not established this truth? How many diseases have not been followed by the weakening, or loss of memory? How many accidents have not modified this faculty, or given it more force? The ideas being in their first origin only the movements, impressed by the objects to the sensitive fibres, it follows that the conservation of the ideas by memory, depends on the disposition which the sensitive fibres have acquired to repeat these movements.* I call the *primitive* or *original state* of the sensitive fibres, that which precedes the time when the objects begin to act upon these fibres. The action of objects upon the sensitive fibres, changes to a certain point the *primitive* condition of these fibres, since it imparts to them dispositions they had not before. By dispositions, I always understand determinating to certain movements. The capa-

* *Essai Analytique sur l'âme.*

city of receiving these determinations, or to express it in a single word, the *mutability* of the fibres lies in their structure. A simple fibre is composed of *molecules*, or *elementary* parts, the form, or the arrangement of which determines the species, or the action of the fibre. If the elementary molecules of the fibres were absolutely incapable of change, the fibres would be rigid, and the objects could make no impression upon them. If the effect which the impression of the objects produce on the fibres were absolutely momentaneous, the impression would not be durable, and there would be no memory. The action of objects upon the fibres *modifies* the original form of their molecules, or changes their *respective* positions. We know nothing of the force which tends to maintain the fibres in their actual condition ; we only know that it exists. Memory requires a certain time to lay hold of objects ; this leads to the supposition that there is a resistance to overcome. The phenomena of memory belong to the brain, and the recall of an idea is the reproduction of the movements to which this idea was attached. Every movement involves a change in the body moved. The condition of the brain changes when any object acts upon it. A necessary consequence of this change is that which follows in the state of the mind, and which we express by the names, sensation, perception, idea, &c.

Extinction of Reminiscences.—The sensitive fibres have been so constructed, that they give to the nourishing particles an arrangement relative to the dispositions they have received ; but if, by some foregoing impulse, this arrangement is disturbed, the nourishing particles cannot place themselves with the same regularity, and are no longer in a position for the preservation of *reminiscences*, and the impressions become effaced. Finally, when with the lapse of time, there remain no fibres nor molecules of fibres, which have retained some of these impressions, the memory of them is lost. Too much softness, as well as too great rigidity of the fibres, are injurious to reminiscence.

The celebrated Soemmering (born 1755, died 1830), was about the last anthropologist of note who assigned to the soul a special seat in the encephalon.

“When,” says Soemmering, in the introduction to his work *On the Organ of the Soul*,* “during the summer of 1793, after laborious researches touching the human brain, I read, for recreation, Platner’s *Questiones Physiologicae*, and accidentally glanced at the drawings, the result of my researches, the idea suddenly struck me that if the principles laid down by Platner were correct, the *prôtôn aisthetêrion* must be in the moisture of the ventricles of the brain.”

The more, he adds, he studied this subject, the more he became

* *Ueber das Organ der Seele von S. Th. Soemmering.* Berlin, 1796.

convinced of the probability, not to say the truth of his theory. He could never understand why the *sensorium commune* was assigned to a solid, or rather a rigid portion of the brain (§ 31). As there is no part of the brain which has not been found destroyed without perceptibly interfering with the function of the *sensorium commune*, the latter cannot be limited to a minute solid portion of the brain. If, further, the *sensorium commune* is in the brain, it must be, as acknowledged by many eminent physiologists (Haller, Albinus, Tiedemann, Platner, etc.), in that part of the brain where all the nerves meet.

Now, the cerebral ends, or the origins of *most*, if not *all* the nerves, may be traced to the walls of the ventricles, where they are washed by, or come into contact with the *aqua ventriculorum cerebri*, which fluid he considers as the organ of the *sensorium commune*, or in other words, the seat of the soul. The liquid of the ventricles is therefore the real *medium uniens* of all the nerves, between body and mind. He then discusses the question, whether a fluid can be animated, and answers it in the affirmative, and that there is no valid reason why the liquid of the ventricles should not be organised just as the albumen of the egg. This work, we may add, is dedicated to Kant, the metaphysician.

We have now brought our historical outline of the localisation theory down to the beginning of the present century. In doing so we have given extracts from the writings of some nearly forgotten authors, as well as from classical writers on the functions of the brain. We think that the discussion of a scientific theory is best advanced by tracing the origin of the fundamental idea; by noting the phases through which it has passed, by watching its gradual development, its maturity, its decay, and its likely resuscitation; for an idea once engendered, never dies, it is sure to revive at some period, though perhaps under a different name.

[To be continued.]

Anthropological News.

ARCHAIC ANTHROPOLOGY AT PARIS.—The first portion of the Proceedings of the 1867 meeting of the Congrès International d'Anthropologie et d'Archéologie Préhistoriques, held at Paris, has been issued. It contains few papers of any length, the principal being those of M. Arthur Issel, "On Evidences of the Antiquity of Man in Liguria"; Mr. Boyd Dawkins "On the *Pleistocene Mammifera* found associated with human remains in Great Britain"; and of M. Philibert Lalande "On the Megalithic Monuments of

the departments of La Corrèze and La Cantal". M. Issel's paper is directed to the question raised by Professor Nicolucci, Hon. F.A.S.L., whether the Ligurians are not an aboriginal race, independent of the great Aryan family, and in this respect he claims for the facts he has collected the special attention of anthropologists. Several human fossils had been found in pliocene deposits within the very limits of the town of Savona. The only bones which had been preserved were, a piece of the right parietal, a fragment of the left upper jaw, with a false molar, a part of the right lower jaw, containing the last molar, and others of less importance. In general, they were of less than the normal size. At Verrizzi, near the seacoast, had been discovered a cavern, containing fossil bones and land shells, which had been explored by Professor Ramorino, now of Buenos Ayres. The cavern was too small to have ever been inhabited; but it contained some pieces of charcoal, and some of the bones had been broken for the purpose of extracting the marrow. The well-known cavern of Menton had been recently again explored by Professor Perez, who discovered many worked implements of flint, jasper, cornelian, etc. Caves at Finale and Toirano contained human bones and worked bone implements. Numerous other recent discoveries of stone weapons had been made in the province, presenting every variety of form. Two of these are figured in illustrations to the paper, and appear to be very elegant and carefully finished spearheads. Only one object of metal, belonging to prehistoric periods, had been discovered. Mr. Boyd Dawkins's paper is a *résumé* of the discoveries of human remains in connexion with those of extinct mammalia in England, ground over which the readers of the *Review* have been frequently led. He supplies a table, showing the mammalia whose bones were found in four caves, with human remains, and in twenty-six caverns without human remains; and also the like details for three river-deposits with human remains, and thirty-seven without.

GERMAN ANTHROPOLOGY.—It is always satisfactory to welcome into existence any periodical devoted to natural science, and to mark its method of treating the subjects in which anthropologists are so deeply interested. In the present instance, we have to consider, first, the applicability of the title; and next, the rank which the new periodical claims for itself among the many scientific publications of the day. *Hertha** is a very good name, but, unfortunately, combined with a very superficial method of treatment. Dr. Rolle's recent book on *Man*, which was very popular in its character, is supplemented by a publication no less popular. We are here presented with no new views,—no great amount of genius is exhibited; and while we may express some degree of pleasure at the attempt, we cannot but feel regret that "our young friend" manifested no "go" in it. We have a restatement, in a very milk and watery way, of the Darwinian hypothesis, containing nothing worthy of attention. Mild criticism of books, more or less recent, follows; and well-known sources of information, such as Dennis's *Etruria*, are resorted to for the pabulum with which to feed the printer's press, and diminish the paper merchant's store. Mediocrity and an atmosphere of "behind handedness" are the main characteristics of the magazine; and while everything is undoubtedly respectable, there is nothing which would

* *Hertha*, *Zeitschrift für Naturwissenschaft und Völkerkunde*. Herausgegeben von Dr. Frederick Rolle. Erster Band. Zweites Heft. Frankfurt am Main, 1868.

tempt the student of science to pause and say "here is something of mark." Even the wrapper bears an anthropological absurdity on the face of it. Popular magazines, unless very efficiently conducted, have neither a public to address, nor any vitality in themselves, except of the vegetative kind. It is very praiseworthy of Dr. Rolle to employ printers in these days of little enterprise, and that is all we can say. Hertha was an ancient deity of the Teutons,—a nice, respectable, easy-going goddess,—and her literary representative is a nice "goody-goody easy-going nightcapped" magazine. We took it to bed the night we received it, and fell comfortably to sleep without experiencing any horrific slumbers, or seeing any spectral appearances afterwards. Science retired from business, and perusing good old authorities, equal in value to time-honoured Goldsmith or Magnall's *Questions*, won't do for these modern days.

K. R. H. M.

SCIENTIFIC SOCIETIES.—Under this heading the following article appeared in the *Pall Mall Gazette* of October 13th, 1868, and is here reprinted as an interesting historical document.—Those who are *au courant* of the scientific and literary gossip of the day are aware that the Ethnological and Anthropological Societies have not always, indeed have very rarely, been on harmonious terms. The first was founded by Dr. King in 1843, and the last by Dr. Hunt in 1863. If their objects could be guessed by their titles, there should not be much difference between them; since the one may be defined as the science which treats of the varieties of the human race, and the other would relate to the natural history of the human species. It may be that the senior society was jealous of the junior; certainly the latter, while professing the utmost respect for her elder sister, made rather high pretensions, urging that pure ethnology was but a part of anthropology, and that she herself was more comprehensive in research, and also less shackled by routine and tradition. Thus it came to pass that on one occasion, connected with the meeting of the British Association, the relations between the two societies were something more than strained. It was felt more than once by the leading members on both sides that an amalgamation, if it could be brought about, would be desirable; and very lately it was stated that so far as financial matters were concerned such an arrangement had been decided on. Now it appears however, that those appointed to act were unable to agree upon a name for the new amalgamated society; the Ethnological wishing to be born anew as the Society for the Promotion of the Science of Man (which name is certainly open to objection, since whatever man may be he is not precisely a science) and the Anthropological desiring to retain its original title. In consequence, it would seem, the negotiations have altogether failed. Both had on their list of members the names of some of the most celebrated explorers and savans of the day; the older society was supported by a well-known literary and scientific weekly journal, the transactions of the younger were chronicled by arrangement with the editor of the *Anthropological Review*. The history of this review and of its connection with the society is explained by the editor in the present quarterly number. There is no need to recount in detail those difficulties which beset the starting of any new organ of public opinion—the jealousies that are aroused, the susceptibilities that have to be studied, or the financial side of the question, which requires to be considered from more than one point of view. Even the Ethnological Society, at one time of its existence, published little or nothing for nearly seven years, and was, so to speak, in a comatose condition. The Quakers had obtained a footing in it, and men whose views were rather bold and speculative than

orthodox or humanitarian were blackballed as soon as they were proposed as members. In 1858 the anniversary meeting collected but six members, including the president, at that time Sir James Clark! In 1859 some gentlemen drew up a prospectus with the object of publishing a quarterly journal of ethnology, but circumstances delayed the carrying out of the plan, and it did not appear until 1862, and then under the title of the *Anthropological Review*. It had long been felt that at the meetings of the Ethnological Society there was a want of sufficient scientific and philosophical freedom of opinion, that the expression of the critical spirit was repressed rather than encouraged, and that the range of subjects was unduly and unwisely limited in extent. The presence of lady members at these discussions was believed to operate unfavourably on them in this respect, and influenced by these considerations, a number of gentlemen united to form the Anthropological Society, based on regulations which they hoped would accomplish a reform in the direction desired. The *Anthropological Review*, while holding itself entirely independent in its own views, offered on certain conditions to publish quarterly a report of the proceedings of both societies. This proposal was accepted by the Anthropologists, but declined by the Ethnologists; and the result of the experiment is stated to have been economically successful, as the subscribers of the former were thus made cognisant of the merits and scientific intelligence of the review. Some offence was occasionally taken by the members when the editor used his judgment in condensing or eliminating extraneous or useless matter from the reports, but difficulties of this nature frequently and inevitably beset any editor gifted with firmness and discretion. By some it was thought that the connection between the society and the review, though a purely business one, was a mistake, and that the remarkably outspoken opinions ventilated by the last had a detrimental effect on the fortunes of the first. We do not ourselves think this probable, though the proprietor and editor has offered to place the copyright of the review, unconditionally and free from debt, in the hands of the society. It does not appear that the Anthropological Society has so far been a pecuniary success. It has almost from the first had two difficulties to contend with, and on both points it certainly commands our sympathy. That which related to the finances it might have at any time escaped had the anthropologists chosen to swell their receipts by admitting as members ladies. But as the exclusion of ladies was precisely one of the original reasons for starting the Association, they declined to accept this solution of their affairs. The force of the arguments will be fully understood by the following extract, which is in the dedication of Carl Vogt's *Lectures on Man*, to Professor Broca, written in 1864:—"The standpoint claimed for the science of ethnology by the late Dr. Knox, by Captain Burton, by myself, and some others, was that of a grave, erudite, and purely scientific study, requiring the most free and serious discussion, especially on anatomical and physiological topics, for the elucidation of the many difficult problems arising out of the subjects brought forward. This, however, was far from being the opinion of a large and powerful section of the society, headed by my venerable friend Mr. John Crawfurd. The party under his leadership desired to place the Ethnological Society on a footing with the Royal Geographical Society, and to render its meetings fashionable and popular by the admission of ladies. You will doubtless smile at the strange idea of admitting females to a discussion of all ethnological subjects. However, the supporters of the 'fair sex' won the day, and females have been regularly admitted to the meetings of the Ethnological

Society during the last three years. Even now the advocates of this measure do not admit their error, nor do they perceive how they are practically hindering the promotion of those scientific objects which they continue to claim for their society. On the contrary, they rejoice at their victory, and Mr. Crawford has publicly on more than one occasion ascribed the success which attended the Ethnological Society under his régime to the admission of ladies." We perfectly coincide in the opinion expressed above. There are and ought to be books written by men for men, which women really interested in such subjects have full liberty and are quite right to read. There is no law even to prevent their having societies of their own if they wish, but as matters stand their presence at the discussions of the Anthropological Society is not desirable, and would certainly either restrain freedom of speech, or embarrass alike the speaker and the audience; more particularly since such subjects as hybridity, miscegenation, strange and mysterious rites practised by savage nations, let alone the researches into Phallic worship, seem to have a special fascination for some of the anthropologists. Thus we find one terming the society the "refuge of destitute truth," where that which might not be said elsewhere could be freely expressed; another is affectionately exhorted "not to be afraid to give full details, he should not shrink from telling them the whole story. After he had done so, and it had been printed in the journal of the society, they could always do as the Abbé Domenech did when he published his *Livre des Sauvages*, paste down the leaves which contained the narrative;" while, with reference to one distinguished member, "the modesty which prevented him giving further particulars" was publicly alluded to as a misfortune. Later on dissensions arose with respect to the effect of missionary enterprise on savages, and also as to whether the biblical account of the Creation and Fall, and other kindred subjects, were to be understood as perfectly open questions, to be treated in a purely scientific and critical spirit or otherwise. The result of this was a secession of some twenty members, who formed themselves into a Victoria Institute under the genial guidance of Lord Shaftesbury. On this point, as on the previous one, we entirely agree with the course taken by the society. Let the same rule guide clergymen as women in propriety and fitness. When they cannot properly listen let them stay away. The speech addressed by the president of the society to the members last February contained the following very natural little outburst:—"Those who object to our non-acceptance of the biblical account of man's formation as the starting point of our inquiries, we can now consign to the 'Victoria Institute;' and those who from diseased livers or disappointed ambition cannot discuss scientific questions without a childish exhibition of temper, to the softening influence of the female sex at the Ethnological Society."

BIBLICAL SCIENCE.—"In scientific circles, the heresy of the most efficient members is startlingly apparent. Against members of the Anthropological Society charges of atheism are freely levelled; and although such a charge does not seem to be justified by any reports of their meetings, or by their printed publications, it is clear that not only out of doors, but even amongst their own circle, it is felt that their researches conflict seriously with the Hebrew writ. The Society has been preached against and prayed against, and yet it is simply a society for discovering everything possible about man, prehistoric as well as modern. It has, however, an unpardonable vice in the eyes of the orthodox,—it encourages the utterance of facts without regard to their effect on faiths."—*National Reformer*, January 14th, 1868.

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THE CAVE CANNIBALS OF SOUTH AFRICA.

By JAMES HENRY BOWKER, Dr. BLEEK, and Dr. JOHN BEDDOE.

AMONGST the many interesting objects of the Transgariep country are the celebrated Cannibal Caverns, the largest of which is situated amongst the mountains beyond Thaba Bosigo. A visit to this cavern will well repay the traveller for the break-neck journey that he is obliged to take before reaching it; and after he has spent an hour or two in the cavern and its vicinity, he will, I imagine, return a wiser and a sadder man; for such were the feelings that I brought away with me after paying it a visit.

We left Thaba Bosigo (the residence of the old Chief Moshesh) in the morning, and after passing that mountain, we travelled up a steep and narrow valley, and then along the Berea heights, until we reached the old deserted mission station Cana, where having obtained the necessary guides amongst the natives of this place, we started for the Cannibal Cavern, which was about two miles distant. Upon our arrival at the mountain above the cavern we left our horses in charge of a native, and descended a steep and rugged foot-path (or rather I should have said, a *hand-and-foot-path*, for the hands have quite as much to do in travelling this precipitous path as the feet), and by dint of holding on to tufts of grass, shrubs, projecting rocks, &c., &c., and by slipping, sliding, and scrambling, we at length arrived upon a grassy ledge, in the face of the cliff, where we could stand without the necessity of holding on. On turning to the right of this ledge the scene opened out in all its grandeur; and certainly, in all my life and wanderings, I have never beheld a more savage looking place. The cavern is formed by the overhanging cliff, and its entrance, a long, rugged, natural arch, extends along the whole face of the cavern, or nearly so, which is in length about one hundred and thirty yards, and its breadth about one hundred. The roof of this place, which is lofty and arched, is blackened with the smoke and soot of the fires of the savages who

formerly inhabited it, and its floor, strewn with the remains of what they had left there, consisted of heaps of human bones, piled up together or scattered about at random in the cavern, and from thence, down the sloping face of the rock, as far as the eye could reach, the clefts and small level spots were white with the bones and skulls of human beings; skulls especially were very numerous, and consisted chiefly of those of children and young persons. These remains told too true a tale of the purpose for which they had been used, for they were hacked and cut to pieces with what appeared to have been either blunt axes or sharpened stones; the marrow-bones were split into small pieces, the rounded joints alone being left unbroken. Only a very few of these bones were charred by fire, showing that the prevailing taste had been for boiled rather than roast meat.

You may guess the feelings with which I wandered about this gloomy sepulchre, and examined its various places of interest. One spot was pointed out to me, with rough irregular steps, leading up into the interior of the cavern to a gloomy-looking natural gallery, and in this place, I was informed, were stowed away the unfortunate victims not required for immediate consumption. From this place it was impossible to escape without passing through the middle of the cavern, which they could not do without being detected.

Horrible as all this must appear, there might be some excuse made for savages, driven by famine to extreme hunger, for capturing and devouring their enemies; but with these people it was totally different, for they were inhabiting a fine agricultural tract of country, which also abounded in game; but, notwithstanding all this, they were not contented with hunting and feeding upon their enemies, but preyed much upon each other also, for many of their captures were made from amongst the people of their own tribe, and even worse than this, in times of scarcity, many of their own wives and children became the victims of this horrible practice. If a wife proved lazy, or quarrelsome, she was speedily disposed of; or a crying baby would in like manner be silenced, and any member of the community showing signs of sickness, or bodily infirmity, would not be allowed to linger or to fall off in condition. Such were the horrible practices of this degraded people, and although it is now commonly reported that they have for many years entirely given up this diabolical way of living, I saw, while at the cavern, unmistakable evidence that the custom has not been altogether abandoned, for amongst the numerous bones were a few that appeared very recent; they were apparently those of a tall, bony individual, with a skull as hard as bronze; in the joints of these bones the marrow and fatty substances were still evident, showing but too plainly that not many months had elapsed since he had met his fate.

This cavern is one of the largest in the country, and from all accounts formed one of the head-quarter establishments of the cannibals; but the whole country, from the Moluta to the Caledon, including a part of the Putesana River, was, about thirty years ago, inhabited by cannibals, who were the terror of the surrounding tribes.

Their mode of living was to send out hunting parties who would conceal themselves amongst the rocks and bushes, and lie in ambush near roads, drifts, gardens, or watering places, for the purpose of surprising and capturing women and children, or travellers, or boys in search of lost cattle, &c.

There are still a good many of the old cannibals in existence. On the day that we visited the cavern, I was introduced to one of them, who is now living not very far from his former dwelling-place. He is a man of about sixty years of age, and (not to speak from prejudice) one of the most God-lost looking ruffians that I have ever beheld in all my life. There is one little episode connected with his life that I may as well relate. In former days, when he was a young man, and residing in the cavern, he captured, during one of his hunting expeditions, three young women, and from these he selected the best looking as a partner for life—the other two went to stock the larder. This union, notwithstanding the strange circumstances attending it, proved to be a happy one, the lady soon reconciling herself to her new mode of living, and settling quietly down in the cavern, where I was shown the corner which she and her husband formerly occupied; and her son, a fine strapping youth, brought us some milk on the day on which we visited the caverns. The old man's name is Rankutsent,* and that of his wife Mategyeni.

Of the vegetation of the cavern and its vicinity, I have but little to say. There was nothing remarkable about it; a few scattered ferns of the commonest kinds grew here and there in the crevices of its roof, and outside of the cavern, growing in the broken skull of a child, which was partly filled with earth and served it as a flower-pot, was a little bulb (one of *Asphodelaceæ*), which I brought away with me as a souvenir of the cavern and its sad associations.

I also visited, in company with some friends, several of the cannibal caverns near the sources of the Caledon River. Some of these are very fine large caverns, though not so extensive as the one that I have just described. These Caledon River caverns are still inhabited, though no

* This is probably *Rakotsuane*, whom Arrousset and Dumas mention as the principal chief of the cannibal tribe, called *Makhatla*, tributaries to Moshesh. According to Arrousset's original account (*Relation*, p. 117), *Rakotsuane* had four kraals under him, whilst the translation (*Narrative*, p. 58) makes him govern twenty-five or twenty-six kraals, the most considerable of which was *Sefika*.

longer by cannibals, as the people have taken to other modes of procuring a livelihood.

At one of these caverns we met with an old savage, who told us that he had formerly been at the cooking of about thirty people, when cannibalism was still in vogue, and he seemed, like the "Last Minstrel," greatly to regret that

"Old times were changed,
Old manners gone ;"

and that

"The bigots of this iron time
Had called his *harmless* life a crime."

for he appeared to think that the objections raised to their former mode of living were unreasonable and uncalled-for. This old savage had a "devilled kidney," or "boiled missionary," look about him.

While we were at this place we heard rather a curious anecdote ; it is as follows :—

Many years ago, during one of the raids made by the cannibals, several individuals were captured and brought into the cavern, and amongst them was a young girl of great personal attractions. After a great deal of discussion on the part of the savages, her life was spared, and she became the wife of one of the cannibals. After some time had elapsed the father of this girl received information that she was still alive, but detained in the cavern ; upon hearing which he sought the aid of one of the missionaries residing in those regions, and together they proceeded to the cavern, where they made the necessary arrangements for the girl's return to her home, the father paying six oxen as ransom for his daughter. But she had not been very long at home before she again disappeared, and, upon inquiry being made, it was found that she had, of her own free will, returned to her friends in the cavern ; strange to say, preferring their mode of living to that of her father, who was not a cannibal.

There is another anecdote told of these people, which I will also relate, as it serves to illustrate their manners and customs, and to show how lightly they regarded human life :—

In former times, when lions were plentiful in these regions, they would occasionally (like the inhabitants of the caverns) choose the flesh of human game in preference to that of wild animals, becoming exceedingly troublesome in their nightly ravages to the inhabitants of the caverns, seizing and devouring many of them. To rid themselves of the lions, these people constructed stone-traps, and (shocking to relate) these stone-traps were baited with young children, whose sad wailings attracted the lions to the spot, when they would be taken in the snare, and the life of the child sacrificed. There is an old woman living near Thaba Bosigo who told me that she had, in the days of her

childhood, been the bait of a lion-trap; fortunately for her the lions did not enter the trap in which she was placed, or she would not have been saved to tell the tale.

The inhabitants of these caverns, who were formerly cannibals, constitute a part of Moshesh's tribe, which has been made up of the remnants of various aboriginal nations. The old chief, I have heard, did all in his power to suppress and do away with cannibalism amongst his people, and his endeavours were at length crowned with success, for they have, almost without exception, ceased to practise this inhuman custom, and have taken to other and more civilised modes of obtaining a livelihood. They are now not only stock-breeders, as well as stock-lifters, but they are also tillers of the soil.

DR. BLEEK HAS KINDLY ADDED THE FOLLOWING.

Those whom it may interest to hear more of the history of this cannibalism, we refer particularly to *Arbousset et Daumas' Relation d'un Voyage d'exploration au Nord-est de la Colonie du Cap de Bonne-Espérance; entrepris dans les mois de mars, avril et mai 1836* (Paris 1842), chap. vii, pp. 105-123. In the English translation by our late colonial botanist, Dr. Brown (Cape Town, 1846), this chapter is at pp. 52-61; but the translation does not contain the plates of the original edition, among which there are two (facing pp. 106 and 110) portraying the cannibal Betshuana. In the map which accompanies the original edition we find the seats of these cannibals laid down to the north-east of Thaba Bosigo. A short account of them is also given in the Rev. Edward Solomon's *Two Lectures on the Native Tribes of the Interior* (Cape Town, 1855), pp. 62-64.

According to the latter writer, the tribes who practised cannibalism were four, of whom two were Betshuana (the *Bafukeng* or *Ba-hukeng* and *Ma-katla*), and two Kafir, viz., the *Ba-makakana* and the *Bamatlapatlapa*. It appears as if these tribes had first become cannibals through the wars which devastated those parts of Africa nearly fifty years ago. There is no doubt, however, that when once the appetite for human flesh had been created, they did not abandon the use of this kind of food, even after the necessity had ceased; and cannibalism became the habit of a people who (as our reporter had observed) inhabited "a fine agricultural country, which also abounded with game." It is possible, however, that cannibalism is of far older date in these regions. The native literature of the Zulus and the Betshuana abounds with reference to the cannibals who are called *A-ma-zimu* (sing. *I-zimu*) in Zulu, and *Ma-rimo* (sing. *Le-rimo*) in Setshuana. In several of the interesting Zulu nursery tales, published by Dr. Callaway, the cannibals play as prominent a part as the giants and man-eating witches in our European nursery tales. How deliciously, it is

told, how Unhlakanyana, entrapped by the cannibals, makes them eat their own mother instead of himself. Another story is remarkable, because it is met with not only among the Zulu, but is also told in essentially the same manner by the Betshuâna tribes. It is the tale of "The Girl and the Cannibals," on pp. 142-152 of Dr. Callaway's *Nursery Tales*; and another Zulu version of it appears to be *Usitungu sonbenhle*, on pp. 74-78. Arbousset recounts it under the title *Tsêlané*, at pp. 119-123 of his *Relation* (pp. 59-61 of Dr. Brown's Translation). The Setlapi version differs somewhat both from the Sesuto and the Zulu. It was written down from the dictation of a native called Mahube, by the late Rev. J. Frédox (Motito, Dec. 13th, 1865), and is preserved in manuscript at the Grey Library.

The following is a general account of the *Amazimu*, or cannibals, as dictated in Zulu to Dr. Callaway by a native (*Nursery Tales*, pp. 155-158):—

"All I know is that it is said that the *Amazimu* deserted other men and went to live in the mountains. For at first the *Amazimu* were men. The country was desolate; there was a great famine; and they wished to eat men because of the severity of the famine. When the famine was great, and men were in want, and there was no place where they could obtain food, they began to lay hold of men and to eat them. And so they were called *Amazimu*; for the word *Amazimu*, when interpreted, means to gormandize—to be gluttonous. So they rebelled against men; they forsook them and liked to eat them; and men drove them away. They went everywhere seeking men for food, and so they were regarded as a distinct nation, for with them men became game. They no longer cultivated the soil; they no longer had cattle or houses or sheep, nor any of those things which they had had whilst they were men. They went and lived in dens. When they found a cave, it became their dwelling-place whilst they went to hunt men. If they caught a man they went to the cave; again they left it to go and hunt men. They had no fixed habitation. If they did not catch a man they were constantly on the move, going about hunting for men.

"If they saw a man going alone they went to him, they decoyed him, and made themselves out merciful people; they treated him kindly, and spoke gently with him; and appeared incapable of doing any evil. When the man was thus beguiled and entirely unsuspecting, regarding them as pleasant people only, they would then lay hold of him; if he was a powerful man he might fight with them, and perhaps drive them off; or they might overcome him and carry him away to eat him. Again they hunted; at all times their occupation was to hunt.

"When they saw many men perhaps the men recognised them, and when they saw the *Amazimu* coming to them they began to prepare their weapons; if the *Amazimu* were numerous they threw themselves into line, and the men, too, threw themselves into line, forming a row. Then they drew near to each other, the *Amazimu*, too, drawing near;

but the men drew near with great courage, (that is, it required very great courage to think of fighting them,) for they knew that the Amazimu were very powerful men and fought. Perhaps they fight, perhaps they do not fight; but the men run away on casting one glance at them, for the Amazimu were terrible. Some who are brave may fight with them, and perhaps beat them; they then run away and leave the men behind, for the Amazimu were very swift; and the men can do nothing, and give over the pursuit.

"Again the Amazimu hunt and fall in with other men: when they fall in with them, perhaps they see that they are Amazimu, and run away, and the Amazimu pursue them until they overtake them; when they overtake them they lay hold of them. Others hide themselves and they do not see them. If they have caught sight of a man who has not hid himself he must run a great distance, they pursuing him till he is tired. For if a man does not hide himself, but contends with them by running only, they pursue him till they overtake him, for they do not readily tire. Then they carry him away with them, seeking a place concealed from men in the wilderness; when they come to such a place they boil and eat him."

Dr. Callaway errs, however, in believing that the tales of cannibals in South Africa "are, for the most part, the traditional record of the incursions of foreign slave-hunters." If Dr. Callaway had seen the caves of the cannibals, he would hardly have doubted that the reports of the natives and the French missionaries were as literally true as could be expected under the circumstances. The long-haired cannibals are evidently Betshuana, who generally have or wear longer hair than the Kafir tribes.

FURTHER PARTICULARS RESPECTING THE CANNIBALS OF SOUTH AFRICA.

By DR. JOHN BEDDOE.

An Englishman, who visited the Cannibal Caves in December 1868, says, there is a regular system of chopping up the bodies, just as a butcher does a sheep. Every skull is cut with an axe across the bridge of the nose, cutting away the jaws, which are thrown away; a hole is then cut in the top of the skull, and the brains taken out. The ribs are all cut through to go into the cooking-pots, the large bones divided, and the marrow taken out. Many bones have gristle still adhering; and there are marks of the knives on the skulls where the flesh has been cut off, in strips, to eat. The bodies of the Europeans who fell in the attack on Thaba Bosigo were eaten at once, under the belief that their courage would pass into the bodies of their devourers.

A Basuto, who lately took service with a colonist near Graham's Town, stated, that the cannibals always ate white people, and blacks of other tribes: but not Hottentots or half-breeds. They ate the heart, liver, etc., took out the brains, tied them in a rag, and baked

them under ashes,—this is in good seasons; in times of greater scarcity they devour the whole body. They ate all the white people who fell into their hands during the late war in the Free State.

When questioned on the subject by the Kaffir servants of the colonist,* the same Basuto said he had never eaten human flesh himself, but he owned to having seen others do so, and he knew all about it.

ON MICROCEPHALI; OR, HUMAN-APE ORGANISMS.†

By Professor CARL VOGT, Hon. F.A.S.L.

I PURPOSE in this memoir to treat of certain cases of idiotism, happily very rare, which are the result of a congenital insufficiency of the cerebral system, and which should be distinguished from such cases of idiotism as are produced by various maladies after birth.

The intellectual faculties may be more or less profoundly altered by a number of different causes. They may be disturbed momentarily, or for a more or less considerable length of time, or even through life, by acute or chronic attacks. They may even be almost entirely abolished by morbid causes, leaving pathological alterations, differing much in their nature, but resembling each other in their effects. We now know that the primary causes of these states of brutalisation, known by the names of idiotism or cretinism, may vary; that cretinism may be combined with thousand deformations, differing much from each other, of the osseous cranium, of the integuments and of the substance of the brain; that effusions, extravasation of blood, inflammations, partial or general dropsy, may induce similar effects as regards the intellectual life of the brain, and that these morbid states may anatomically be manifested by a number of frequently opposite alterations.

I do not intend to enter into the analysis of all these cases, which are the result of morbid conditions supervening in an originally normally constituted organ. I shall only treat of cases of microcephaly, properly so called; where, by an arrest of development—which supervened during the uterine life of the fœtus, and by causes as yet unknown—the brain of the embryo is struck before being definitively

* Who was my informant.—J. B.

† We propose to publish, in a series of articles, a translation of the greater part of the important Memoir which M. Vogt has recently published on the above subject. We are glad to announce that we do so with the author's sanction and cooperation.—EDITOR.

constituted, and where, consequently, the infant is born with a brain considerably less in volume, and profoundly modified in its essential forms. I also exclude monsters not viable, because of the greater or lesser deficiency of the brain ; acephalous monsters, and anencephali (without brain). I confine myself to human products who are viable, and *who have lived*, in whom has been observed, from their birth, a brain too small, and a small cranium moulded on a defective brain.

Apart from any other quality of form or structure, the cerebral mass, in the genus *homo*, ought to have a minimum of volume and weight, below which it cannot descend without the cerebral functions, and, in the first place, those of the intelligence becoming sensibly affected. Microcephaly constitutes, as the Greek word justly expresses it, that condition in which the cranium, and the brain contained in it, have not reached the limit assigned to the species, and in which already, before birth, the cerebral functions are disturbed in consequence of arrest of development.

Cases of microcephaly are, I repeat, rare. The crania and the brain of microcephali are the most valuable objects in pathological collections. Despite long continued researches, I have, in the whole scientific literature, only found notices of about forty cases, and even of these there are, probably, some belonging to the category of idiotism from disease. I shall only mention the cases which I could not examine myself, by citing the sources I have taken them from. I shall, however, treat, in detail, of the crania and casts of the brain, which have kindly been placed at my disposal by the directors of the respective museums to which they belonged. Owing to the liberality of Messrs. Henle, of Goettingen ; Reichert and Virchow, of Berlin ; Luschka, of Tubingen ; Welcker, of Halle ; Koellicker and Recklinghausen, of Wurzburg ; Graeser, of Eichberg (Nassau) ; Krauss, of Stuttgart, I have been enabled to present—at the sitting of the Natural History Section of the Genève Institute, June 6, 1866—nine well characterised crania of microcephali, which form pretty nearly the whole inventory of Germany, as regards this formation. I am also indebted for many particulars, and pieces for comparison, to Messrs. Ecker, of Freiburg ; Frey, of Zurich ; Theile, of Weimar ; Capellini, of Bologna ; Klebs, of Berne ; Dr. Schaerer, of Waldau ; De la Harpe, of Lausanne ; Broca and Quatrefages, of Paris : to all of whom I return sincere thanks.

In this first memoir, I only give the particulars of German microcephali, for the history of which I was enabled to collect all the materials, excepting two brains preserved in alcohol. I shall, in supplements, treat of such, the materials for which are as yet incomplete. There seems to hover an evil star over all the materials formerly col-

lected at Paris. Despite the researches of my friend, M. Broca, none of the objects examined by MM. Cruveilhier, Baillarger, and Gratiolet, have been discovered,—a fact the more to be regretted, as the collection contained the only known cranium of a Negro microcephalus.

As I had no brains at my disposal I was obliged to confine my researches to crania and casts of the cranial cavity. I have given the *contours* of all the objects in natural size in geometrical projection. Some of the figures have been drawn with the apparatus of Lucae; but for the great majority of the objects I have used the diagraph of Gavard of Paris, an excellent instrument, not less exact than that of Lucae, and more easy in application for the designer.

All my drawings, excepting two views of the bases of crania, are taken upon a uniform position of the cranium, in which the superior margin, or the axis of the zygomatic arch, is parallel to the horizontal plane. It is known that this plane has been adopted by the Anthropologists who met at Goettingen, and in the works of MM. Ecker, Lucae, His, Rutimeyer, as well as in my own work on Man. I have reduced to the same position the drawings of the casts of the internal cavity representing the brain, in the conviction that the contents should be seen in the same manner as the capsule. The crania and the casts, being all drawn in natural size, may easily be compared with each other, by superposing the traces upon tracing paper. But here we must explain the mode of superposing these traces. I place the traces of the profile in such a manner that the median points of the nasofrontal suture exactly cover each other, and I reduce in the view of the profile the zygomatic arch to the horizontal plane. The differences in the *contours* are then seen at once, and are much more easily understood than by long descriptions. The division of my work was indicated by the nature of my subject. I first treat of the microcephali which have become known to me, citing all the sources where notices of them may be found, as well as the museums containing the preparations.

I then proceed to a detailed description of these pieces, reporting at the same time textually, as far as I had access to these documents, all that the respective authors said on these cases. I should have wished to separate, in order to insert them at a more appropriate place, the notices on the cranium and the brain, from the intellectual manifestations and the biography of these beings; but, to my regret, this was not always possible. I have, therefore, in the first chapter reported all that appeared to me important, confining my own observations to the cranium alone. I thus pass in review first the adults, and then infant microcephali, and summarise the facts in separate articles. I finish this chapter by a general summary on the conformation of

crania, treating especially of prognathism and of the position of the great occipital foramen.

In the second chapter I proceed to the examination of the brain by the aid of internal casts of the cerebral cavity. I examine the volume, the relation of the different parts and lobes, the convolutions and the relations of certain parts to some localised faculties.

The third chapter is devoted to the study of the manifestation of life, both somatic and intellectual. Amongst the cases will be found one of a microcephalous girl still living in the Canton of Berne.

The fourth chapter finally contains some general remarks on the causes of microcephaly, its relations to normal conformations, and on the results obtained for science in general, and the theory of Darwin in particular.

LIST OF KNOWN MICROCEPHALI, THE AUTHORS WHO HAVE DESCRIBED THEM, AND THE MUSEUMS IN WHICH THE PREPARATIONS ARE PRESERVED.

(a) GERMANY.

1. Gottfried Maehre, of Ratzum, died aged 44 years; Tables 1-iv. The entire cranium is in the Museum of Halle.
J. G. Carus, *Atlas der Cranioscopie*, Tab. iv, 1843.
Hermann Welcker, *Untersuchungen über Wachsthum und Bau des Menschlichen Schaedels*, 1862. Some measurements of this cranium as well as of No. 4.
2. Michael Sohn, of Kiwitzblott, near Bromberg, died aged 20 years. Plates 5-7.
3. Friederich Sohn, his brother, died aged 18½. Pl. 8-10. The entire skeleton of the former, and the cranium of the latter, are in the Berlin Museum.
Johannes Müller, *Nachrichten über die beiden Mikrocephalen zu Kiwitzblott bei Bromberg in Medicinische Zeitschrift für Heilkunde in Preussen*, 1836, Nos. 2 and 3.
4. Conrad Schuettelndreyer, of Buckeburg, died aged 31. Pl. 11-13. The cranium is in the Museum of Goettingen.
Blumenbach, *De anomalis et vitiosis quibusdam nisis formationis aberrationibus*. 1813.
Foerster, *Atlas der Missbildungen: Handbuch der speziellen Pathologischen Anatomie*, 1834, p. 406, pl. 17.
5. Microcephalus, of Jena, died aged 26. Pl. 14-16. The cranium and the brain are in the Goettingen Museum.
Theile, *Ueber einen Microcephalus in Zeitschrift für rationelle Medicin*, von Henle und Pfeufer. Third series, vol. xi, p. 210, 1861.

6. Louis Racke, of Hofheim (Nassau), died aged 20. Pl. 17 and 18.
The cranium is in the Museum of the Hospital at Eichberg,
near Eltville (Nassau).
7. Margareta Maehler, of Reineck, died aged 33. Pl. 19-21. The
cranium is in the Museum of Würzburg.
Virchow, *Gesammelte Abhandlungen zur wissenschaftliche Me-*
dicin, 1856, p. 947.
O. Schröder, *Krankengeschichte und Sectionsbericht in Archiv*
für wissenschaftliche Medicin, von Virchow, vol. xx, p. 358.
Foerster. See No. 4.
8. Johann Moegle, of Plattenhardt, near Stuttgart, died aged 15.
Pl. 22, 23. The cranium is in the Tübingen Museum, No. 14.
9. Jacob Moegle, the cousin of the preceding, died aged 10. Pl. 24-
26. The cranium is in the Stuttgart Museum, No. 13.
10. Johann George Moegle, brother of the preceding, died aged 5.
Pl. 25, 26. The cranium is in the Tübingen Museum, No. 12.
Jaeger, *Zur Geschichte hirnarmer Kinder: Medicinisches Cor-*
respondenzblatt des Württembergischen aerztlichen Vereins,
vol. ix, 1839, No. 28.

(b) FRANCE.

- 11, 12, 13. Three cases mentioned in Cruveilhier, *Anatomie Patholo-*
gique, liv. 30, pl. 4.
14. A case described by Blachez in *Bulletin de la Société Anatomique*
de Paris. 2me série, vol. i, Juillet 1856.
15. Case of 4 years; cranium and brain confided by M. Giraldes to
M. Gratiolet.
Gratiolet, *Observations sur la Microcéphalie*, in *Bulletins de la*
Société d'Anthropologie de Paris, vol. i, p. 34.
Gratiolet, *ibid.*, vol. ii, p. 68.
Gratiolet et Leuret, *Anatomie comparée du Système Nerveux*.
Atlas, pl. 24.
16. Another case of 4 years. Cranium and brain given by M.
Giraldes to M. Gratiolet.
Gratiolet et Leuret, *Anatomie comparée du Système Nerveux*.
Atlas, pl. 32.
Gratiolet, *Observations sur la Microcéphalie*, in *Bulletins de la*
Société d'Anthropologie de Paris, vol. i, p. 34.
17. Case presented by M. Broca to the Anthropological Society of Paris.
18. Girl, aged 4 years, presented by M. Baillarger before the *Académie*
de Médecine.
Annales Médico-psychologiques, par Baillarger: Cerise et Mo-
reau, 3me série, tome 2me, p. 473, 1856.
19. Boy, two years of age, observed by M. Joly, mentioned by M.
Baillarger in the same note, p. 471.

(c) ENGLAND.

20. Cranium, preserved in the College of Surgeons. Male.
Owen, Osteology of the Chimpanzee,—Transactions of the Zoological Society, vol. i, p. 343.
- 21, 22. Two crania and brains, in the Museum of St. Bartholomew's Hospital. Described in the Catalogue of that Museum.
23. Case of a female, aged 42 years.
Gore, Notice of a case of Microcephaly, in Anthropological Review, vol. i, p. 169.
Defert, Rapport sur la Notice de M. Gore, Bulletins de la Société Anthropologique de Paris, vol. v, p. 15.
- 24, 25. Two cases, boy aged 11, and girl aged 7 years. Conolly.
Dublin Quarterly Journal, August 1865.
26. One case. Peacock, Notes on a case of Congenital Atrophy of the Brain, and Idiocy, in Reports of the Pathological Society of London, vol. x, session 1858-1859.
27. One case. Willis, Cerebri Anatome. Genève, 1860, p. 20.
28. Young girl, of Cork. Cranium preserved in the Museum of the College of Surgeons.
Spurzheim, Anatomy of the Brain. London, 1826.
29. Brain of a boy aged 12, presented by Mr. Marshall. Marshall, Anthropological Review, vol. i, p. 8, May 12, 1863.
Defert, Rapport sur la Revue Anthropologique de Londres, in Bulletins de la Société d'Anthropologie de Paris, vol. v, p. 560.
At the meeting of the Anthropological Society of London, May 1, 1866, Dr. Down observed that there were many cases of living Microcephali of a very low organisation. Dr. Beigel added, that he had seen fifteen of them at Colney Hatch.—Journal of the Anthropological Society, No. 15, October 1866, p. 182.

(d) HOLLAND.

30. Cranium, preserved in the Museum of Leyden, the individual died at the age of 20.
Sandifort, Museum Anatomicum Academiæ Lugduni Batavorum, vol. iv, Tab. 690-691.

(e) SWITZERLAND.

31. A boy, aged 9 years, died at Abendberg, near Interlaken.
Vrolik, Beschrijving van gebrekkigen Hersen-en Schedel-Vorm. Amsterdam, 1854.
- 32-34. Three cases, among five infants, at St. Leonard, near Sion.
Baillarger, Annales Médico-Psychologiques, 3me série, vol. ii, p. 460.
35. A. R., girl, aged 5, died at Abendberg, near Interlaken. Autopsy by Professor Valentin of Berne, in
J. Guggenbühl, Die Heilung und Verhütung des Cretinismus und ihre neuesten Fortschritte, Bern und St. Gallen, 1853, p. 56.

36. Marie-Sophie Wyss, aged 16 years. Still living, in the hospice for poor and sick females, established by the government of the canton Bern, in the château Hindelbank, near Berne.

(f) ITALY.

- 37, 38. Two cases. One of the crania which belonged to an individual aged 36, is in the Museum of the Hospital of S. Spirito, at Sassia; the other, aged 19, is in the Museum of Manicomio, at Rome.

Bastonelli, *Sopra due casi di microcefalia*. Bolletino delle scienze mediche. Bologna, anno 31, ser. iv, vol. xi, Febbrajo, 1859.

G. C. Carus, *Zur vergleichenden Symbolik zwischen Menschen und Affenskelet*. Act. Acad. Leop. Naturæ Curiosorum, vol. xxviii, 1861.

(g) ASIA.

39. Mahratta girl, aged 16.

John Shortt, *Description of a living Microcephale*,—Journal of the Anthropological Society, No. 15, October 1866, p. 181.

(h) AMERICA.

- 40, 41. The two Aztecs exhibited in Europe; boy Maximo, and the girl Bartola. The head of one of these is said to be in the Museum of Berlin.

Leubuscher, *Ueber die Azteken*, in—Notizen aus der Natur und Heilkunde, von Froriep, 1856, vol. ii, Nos. 6, 7.

C. G. Carus, *Ueber die sogenannten Aztekenkinder*, in—Berichte der Akademie in Berlin; Mathematisch-physikalische Classe, 1856, p. 11.

(i) AFRICA.

42. Negress, aged 14.

Gratiolet, *Observations sur la Microcephalie*; Bulletins de la Société d'Anthropologie de Paris, vol. i, p. 34; vol. v, p. 18.

A general treatise, by R. Wagner, on the structure of the brain of microcephali compared with that of the normal brain in man and apes, appeared in 1862 under the title of, "Vorstudien zu einer wissenschaftlichen Morphologie und Physiologie des Menschlichen Gehirns als Seelenorgan." Zweite Abhandlung Ueber den Hirnbau der Mikrocephalen mit vergleichender Rücksicht auf den Bau des Gehirns des Normalen Menschen und der Quadrumanen.

R. Wagner treats here specially of the Jena case (No. 5), and cites the cases of the Sohns (Nos. 2 and 3); Maehre (No. 1), of Gratiolet (Nos. 15, 16, and 34); the child, aged fourteen, described by Baillarger (No. 34); the two cases of Conolly (Nos. 21 and 22), of Cruveilhier (Nos. 11-13), of Plattenhardt (Nos. 8-10), two children of Roringen,

near Goettingen, who have not been scientifically examined; the case of Schuttelndreyer (No. 4), that of Leyden (No. 28), of Maehler (No. 7), and that of Abendberg described by Vrolik.

About the same time Wagner gave a general *résumé* of his views on microcephali, in the "Archiv für Naturgeschichte," of Troschel, 1861, vol. i, p. 63.

M. Gratiolet gives also a summary of his studies on this subject in a "Mémoire sur la microcéphalie considérée dans ses rapports avec la question des caractères du genre humain," in Mémoires de la Soc. d'Anthrop. de Paris, vol. i, p. 61, 1860-1863.

TABLE OF CASES OF MICROCEPHALY, WHOSE AGE AND SEX WERE ASCERTAINED. ARRANGED ACCORDING TO AGE.

Nos. of Order.	Name and Indication of Case.	No. of the preceding list.	Age. Years.	Sex.
1	Gottfried Maehre	1	44	Male.
2	Case of Mr. Gore	23	42	Female.
3	Case of Sassia (Bastanelli)... ..	37	36	Male.
4	Margaritha Maehler	7	33	Female.
5	Schuttelndreyer	4	31	Male.
6	Case of Jena	5	26	"
7	Michel Sohn	2	20	"
8	Case of Leyden	30	20	"
9	Louis Racke	6	20	"
10	Case of Rome (Bastanelli)	38	19	"
11	Frederic Sohn	3	18	"
12	Aztec Maximo	40	17	"
13	Sophie Wyss	36	17	Female.
14	Maharatta girl	39	16	"
15	Johann Moegle	8	15	Male.
16	Negress (Baillarger)	42	14	Female.
17	Aztec Bartola	41	14	"
18	Case of Mr. Marshall	29	12	Male.
19	Case of Dr. Conolly	24	11	"
20	Jacob Moegle	9	10	"
21	Case of Abendberg (Vrolik)	31	9	"
22	Case of Dr. Conolly	25	7	Female.
23	Johann George Moegle	10	5	Male.
24	A. R., of Abendberg (Valentin)	35	5	Female.
25	Case of M. Giraldes	15	4	Male.
26	Case of M. Giraldes	16	4	"
27	Case of M. Baillarger	18	4	Female.
28	Case of M. Cruveilhier	12	3	Male.
29	Case of M. Joly	19	2	"
30	Case of M. Cruveilhier	11	8 months	"
31	Case of M. Cruveilhier	13	new-born.	"

Of these thirty-one cases, nine are of the female sex. In eight other cases, the age of which is unknown but the sex indicated, there

is one female (case of Cork, No. 28); there are thus about 25·6 per cent. or one-fourth of the female sex.

[*To be continued.*]

THE ANTIQUITY OF MAN.

How fully have the discoveries and researches of geologists confirmed the remarks of the poet,—

“The dust we tread upon was once alive.”

Everywhere, at various depths, and in various kinds of strata, have the numerous remains of living organisms been found,—the remains of living beings that played their part upon the earth for a time and then disappeared. The geologist has not only ascertained that such dust once lived, but has also arrived at a knowledge of the time which has elapsed since it was alive; so that we talk of the epochs of palæontology very much in the same manner as we do of those of history. Who among the wisest sages, three centuries ago, could have predicted that the crust of this planet should tell such a wonderful story—a story by which a knowledge of the various changes which it has undergone would be carried back millions of years? Who could have foretold then that so many generations of extinct creatures were entombed in the hard rocks, and preserved in a fossil state through periods of time in comparison with which the duration of Egyptian pyramids, catacombs, and mummies, is as insignificant as the lifetime of an ephemeride. Strange tales have, indeed, been told by mammoths, mastodons, plesiosauruses, and trilobites. We are startled when we open any well-written geological work, and read of the successive genera of animals which have inhabited this world, each one lasting its day,—which was doubtless a long one,—and another coming to act its part after it;—when we find it stated, that what is hill was once valley, and that what is valley was once hill;—that what is sea was once land, and that what is land was once sea;—that what is hard and compact rock, was once loose and incoherent sand; and that what is now loose and incoherent sand, was once hard and solid rock;—that our loftiest and most majestic mountains, with their bold granite peaks, defying the elements, were once slag and mud; and that what now forms mud at the bottom of the ocean formed, during olden times, the bold crests of elevated mountain ridges. While reading

about such astonishing matters, may we not, for a very good reason, pause for a moment, and inquire whether we have got into our hands a book somewhat akin to the *Arabian Nights*,—a book pleasing to the fancy, but totally unconnected with the realities of nature? But such is not the case; for as we proceed, we find that startling propositions and assertions are supported by solid arguments and a mighty array of facts. We cannot resist coming to the conclusion, when we weigh these arguments and consider the facts, that there is truth in that which is said,—that many of the statements are incontrovertible, and that assuredly we are not reading a book about dreamland, but one which discusses the sternest realities in the universe.

While many of the wonders of the Old World's history have been revealed by geological discovery, the ancient records of the earth's strata have not, till of late, thrown much light either on the antiquity or early condition of man. Within the last half-century, however, numerous human remains have been discovered buried in strata, which, although comparatively recent, are still of great antiquity when compared with the remotest time to which history can lead us back. Human bones, and even whole skeletons, have been discovered in such strata; while along with these, and in other strata without them, rude tools of stone, bronze, and bone, have been found, which attest that he was an inhabitant of the earth when those strata were formed. The discovery of these ancient human remains has led to various discussions with respect to man's antiquity,—both bones and tools being disputed as genuine; but unwearied scientific research and zeal have in the end triumphed, by fully establishing the genuineness of both bones and tools. The judgment, patience, and calmness with which scientific men have answered carping objections, are extremely praiseworthy; and not only are those tools alone made to supply evidence of man's existence in those ancient times, but the very marks on the bones of those animals which were killed by him, are made to throw light on the case in point. The discovery of the ancient ruins of cities in America, which shows that civilisation once existed in the land where the savage Red Indian has subsisted for innumerable ages on the produce of the chase; and of brown-haired mummies, which prove that the founders of that civilisation were a different race from these Indians, and were probably of European origin, has supplied us with further important evidence of the antiquity of man.

Of late, one of the most distinguished geologists of the age has written an elaborate work on this interesting subject,—a book delightfully written, and fraught with most important information on the question discussed: although, perhaps, a little prolix, and abounding

in irrelevant matter, which tends to make the reader lose sight of the main argument. But it may be said, in palliation of these faults, that the actual geological facts known bearing directly on the question, are, upon the whole, circumscribed; and that, in consequence, the author could not do otherwise than speculate upon the unknown, and point out the fields to be explored, when material to serve his turn was wanting. We have, not, therefore, those few strata only, in which man's remains have been found, described, but a most magnificent delineation of all the strata connected with them, and an elaborate investigation of their history, character, and the changes which they have undergone. So entertaining and fascinating are Sir Charles's descriptions of those gigantic geological revolutions, which have effected such strange changes in the structure of the crust of the earth, that the reader, far from cursing, feels inclined to bless, his digressive propensity. Although Sir Charles Lyell has designated his book *The Geological Evidences of the Antiquity of Man*, yet it should be more properly named "The Geology of the Strata in which Man's Remains have been found, or in which they may be found." Sir Charles has not exclusively restricted himself to the geological evidence; but has availed himself of that furnished by archæology, philology, and physiology. The work is not only one on the geological evidence of man's antiquity; but, also, on all other evidence which can be brought to bear on the point. Although, obviously, Sir Charles Lyell has thrown no new light on the antiquity of man, the most of the evidence brought forward, having previously appeared in other writings; yet he has treated the matter in such a superior manner, has imparted to it so much interest, has cast it in such a new form, and has so united scattered evidence and so conspicuously presented it to view, that the work cannot certainly be called a compilation, but a comprehensive philosophical treatise in which the arguments, discoveries, and observations of others, are used as material for enlarged and profound scientific generalisations.

It is remarked by Emerson, in his "Representative Men," that "Great minds are more distinguished by breadth than by originality," and this breadth of mind is perceived in all the writings of Sir Charles Lyell, in his "Principles" and in his "Elements of Geology"; and it is to this large, comprehensive handling of scientific subjects that a great portion of the extraordinary attractiveness of his writings, is particularly owing. As we read his works we are surprised at his far ken and range of vision, and wonder that so many of the bearings of facts and hypotheses upon each other, escaped our own observation. In considering this work, we can only regret that a book so finely written—a book in which the grand geologic changes connected with, and imme-

diately preceding, human existence, are delineated with the vivid conception of a poet, should, from the nature of the subject, want those enduring elements which ensure immortality. However, as our knowledge of this important question advances, it is to be hoped that this excellent scientific treatise shall keep pace with the progress of discovery by successive editions. It is a work, doubtless, that every lover of science and literature should feel sorry to see shelved or out of print.

It may be said that, in some respects several feel disappointed, on account of having fully expected that the question would have been treated altogether from a geological point of view; but it can easily be conceived that it was hardly possible to restrict it exclusively to the geological evidence; for, without the evidence supplied by other sciences being brought to bear on the geological, the latter could not be so well understood or appreciated. As yet, this department of science is in its infancy, and all that we know of it, is of a scattered and fragmentary character.

To unite isolated and disjointed facts, the sole resource of the writer, in the circumstances, was to reason boldly on the unknown, and bring conjecture to aid in constructing a rational theory capable of explaining the phenomena. The speculative character of the book, and its enlarged generalisations, we consider to be among its highest merits. It is highly suggestive, and cannot fail to lead the reader into new trains of thinking; for the writer never allows him to view the scenery from one point; but successively presents it to him from different positions, owing to which he is enabled to see it in all its variety. Well, indeed, do the words of Emerson apply to Sir Charles in this respect:—"Every surmise and vaticination of the mind is entitled to a certain respect; and we learn to prefer imperfect theories and sentences, which contain glimpses of truth, to digested systems which have no one valuable suggestion. A wise writer will feel that the ends of study and composition are best answered by announcing undiscovered regions of thought, and so communicating, through hope, new activity to the torpid spirit."

Indeed, "announcing undiscovered regions of thought," appears to be a principal aim of the "Antiquity of Man," and in few works has it done this to more purpose, and, assuredly, not many books are so well calculated to communicate "new activity to the torpid spirit" as this one is.

The first eleven chapters of the book discuss questions connected with those strata in particular, in which either the bones of man, or implements employed by him, or works constructed by him, have been found. We have a long and interesting account of the Danish

peat bogs, mounds, and kitchen middens, which have, for a length of time, so much excited the interest of archæologists and geologists. Those curious lake dwellings which have of late years been discovered in such large numbers, receive a large share of the author's attention. The flint instruments, first discovered and examined by M. Boucher de Perthes, are brought prominently before the reader's view ; while the arguments of that celebrated man are recapitulated and put in a new light. The ages of stone, bronze, and iron, are examined, and their relative antiquity considered. The progress of man, however, from the use of stone tools to those of bronze, and from those of bronze to those of iron, affords but an uncertain guide to the tracing of man's antiquity ; since all these kinds of tools may have been used contemporaneously by different tribes and nations bordering upon one another ; while the substitution of the one kind for the other may be as often owing to conquest as to its gradual introduction either by native discovery or commerce. There is very great reason to think that, long after the introduction of iron, both stone and bronze tools were used. Even in the time of Tacitus, arrows headed with bone were used by the Fenni, a tribe that inhabited the north-east of ancient Germany. Tacitus assigns as a reason for using bone the scarcity of iron ; but we may reasonably assume that it was fully as much owing to the low civilisation which he ascribes to them. If in the time of Tacitus this people used arrows headed with bone, it is not unlikely that stone weapons were also employed by them ; and on this account there are good grounds for inferring that a few centuries before the time of Tacitus both stone and bronze weapons were by no means unfrequent among several European tribes. The readiness with which iron succeeded other metals and stone, no doubt depended much on the aptitude of different peoples to use or apply it ; and when different nations were fiercely waging war with one another, it may well be supposed that those who lived in an iron-producing country, would use all their endeavours to prevent those who lived in a country less favoured to obtain this metal ; so that, in consequence, the latter would be constrained to use such substances as stone or bone from absolute want of that which was more efficient.

What the civilisation of the Fenni was, may be best learnt from Tacitus's own words :—"Fennis mina feritas, fœda paupertas ; non arma, non equi, non penates ; victui herba, vestitui pelles : cubile humus : sola in sagittis spes, quas inopia ferri ossibus asperant." *

While the extraordinary revelations of the peat mosses and shell mounds of Denmark, with respect to the existence of man in that country long before the historic period, excite our amazement, not

* Tacitus, *Germania*, cap. 47.

less striking are the wonderful tales told by those curious lake dwellings which have of late years been discovered in such large numbers. When these lake dwellings are considered, as well as the peat mosses and shell mounds of Denmark, the antiquity ascribed to them cannot be said to be in the least exaggerated ; and an age of 7,000 years assigned to the oldest, may be said to be under rather than above that which is justified by facts. As beech flourished in Denmark two thousand years ago, we may reasonably allow it a duration of two thousand years previous to that time, and as it flourishes now as well as ever, we may justly infer that it will last at least a thousand years longer. Climate changes slowly, and so do the physical features of a country ; and, during those slow changes, one species of tree followed the other in the forests of Denmark. Four thousand years is about as short a time as we can allow for the duration of beech, and, certainly, we may allow twice the time for a succession of two kinds of oak ; this will give a duration of 11,000 years to the highest portion of the Scotch fir. When we consider that since the inhabitants of the Danish Isles, whose remains are found in the shell-mounds, lived, the physical features of Denmark, and the communication between the Atlantic and the Baltic, have been so much altered, as to affect materially oysters and other shell-fish found on the coast, to conclude that such a time has elapsed since the shells were deposited in the mounds is highly reasonable.

There is no country which tends to impress the mind with a stronger belief in the great antiquity of man than the land of the Pharaohs. Here are to be seen the remains of a mighty civilisation, the beginning of which is completely hidden from our view by the mist of ages. Immense pyramids, vast cities in ruin, gigantic sculptures, paintings which have defied the injuries of time, hieroglyphics, and mummies, about which early history is ignorant, and which were greater mysteries to Plato and Herodotus than to modern Egyptologists. How remote must that period be when the ancient Egyptian, like the savage inhabitants of Europe at the time when Denmark was covered with forests of Scotch fir, or like the modern natives of Australia, New Caledonia, New Guinea, and other South Sea islands, wrought with stone implements and fought with flint and bone weapons ! When the inhabitants of Denmark, whose remains are found in the shell mounds and peat mosses, killed wild beasts with bone weapons and cut them down with flint hatchets ; when the inhabitants of Switzerland raised their wooden huts on lakes and feasted on the flesh of the fox ; did not the mighty cities of Egypt flourish in all their magnificence, abounding in superior artists and profound men of science ? their inhabitants in possession of numerous luxuries and refinements ; with a learned priesthood and

stable government ; the useful arts ministering to their wants, and supplying them with innumerable comforts and enjoyments. Did not those ancient Egyptians trade along the coasts of the Mediterranean ? and had they no intercourse with the barbarous tribes of Europe ? Did not bronze and iron find their way across the Mediterranean from Egypt and Phœnicia to Greece, Italy, and Gaul ? From the amazing progress which has been made during the last thirty years, in the knowledge of everything relating to man in prehistoric times, we are led to think that not many years shall elapse ere all these questions shall be satisfactorily answered. Egypt seems to us to be the land, more than any other, which brings archæology more closely in contact with geology ; and nothing can be more pleasing to the lovers of science than to learn that the Nile mud deposit is likely to afford a clue to the knowledge of the antiquity of Egyptian civilisation. Almost every year some new light is thrown upon this subject by the discovery of ancient remains at various depths in the Nile valley.

Long after its discovery America was considered to be a land which had never made any progress in civilisation, a land which had not even been inhabited many centuries before Europeans had visited its shores, and whose inhabitants were supposed to have entered it by Behring's Straits from Asia. The Spaniards encountered in Mexico and Peru a very rudimentary civilisation, certainly, which was supposed to have been imported from the old world. No land could be imagined to form a greater contrast to Egypt than America, from being apparently so void of all monuments of ancient human art. But this continent appears now in a different light ; monuments of ancient civilisation have been discovered over a vast extent of territory. Huge mounds, ruins of cities, sculpture, articles of gold and silver, and pottery attest that the western hemisphere was not always a dreary, vast, interminable forest, serving no other human purpose than a hunting ground for the naked, savage Red Indian. Those who created this civilisation seem to have been a different race from any of the present aboriginal ones ; for the skulls excavated from some of the burying places are different from those of the Red Indians. Of late, mummies have been discovered in South America with brown hair, a fact which proves that a brown-haired race, at one time, abounded there. Whence this brown-haired race arrived, if not autochthonous, is a question not easily answered at present. If from Europe, they must have emigrated at a time long anterior to the earliest period described in history ; and a civilisation must have existed on the western shores of this continent, of which all traces were lost at the time when the Roman sway prevailed in Britain, Gaul, and Spain. It may now be positively affirmed that America was inhabited by man at a very remote period, as human

remains are found there which have all the appearance of being as ancient as those found on the old continent. Under four superimposed forests, in the delta of the Mississippi, a human skeleton, along with some charcoal, is said to have been found, to which Dr. Dowler ascribes an antiquity of 50,000 years. Count Tourtalais found fossil human bones, consisting of jaws; with some bones of the foot, in a calcareous conglomerate forming part of the coral reefs of Florida, which are estimated by Professor Agassiz to be 10,000 years old. At Natchez a human bone was discovered mingled with those of the mastodon and megalonyx. From these discoveries we anticipate a great many more in a few years to come.

Old as are the human remains found in the Danish shell-mounds and peat mosses in the lake dwellings, in the coral reefs of Florida, in cromlechs, barrows, and kist-vaens, much older than these, by far, are the flint implements and bones of man discovered in post-pliocene formations, in France, Belgium, and Sicily. In the valley of the Somme, in the valley of the Ouse, in the basin of the Seine, in the basin of the Thames, in the clay of the Hoxne, in the gravel of Icklingham, in the valley of the Ouse, in the caves of Engis, Engihoul, and Neanderthal, in a cavern near Wells, in the caves of Gower in Glamorganshire, in the Grotta di Maccagnone in Sicily, the indefatigable zeal and perseverance of the man of science, have traced out the bones of man and the rude stone tools used by him at a primitive stage of his existence, associated with the bones of numerous extinct species of animals, which passed away along with the telluric conditions to which their organism was related.

It is to M. Boucher de Perthes that the world owes the first discovery of these flint instruments in ancient alluvium containing the bones of extinct animals,—a discovery doubted for years, the sceptical suspecting that the tools were spurious; but, at last, their genuineness has been completely established. No doubt there were impostures which justified the exercise of a degree of caution on the part of those who had not acquired the experimental skill in these matters, which readily distinguishes the real from the counterfeit. This skill, according to Sir Charles Lyell, was possessed by M. Boucher de Perthes, of whom he speaks in the following terms:—

“The antiquarian knowledge of their discoverer enabled him to recognise, in their rude and peculiar type, a character distinct from that of the polished stone weapons of a later period, usually called ‘celts.’”

The land and sea, the hills and valleys, the flora and fauna of Europe, have undergone vast and extraordinary mutations since man first trod upon its soil. Elephants and rhinoceroses grazed in the valleys of France and England; hippopotamuses bathed in their rivers; and cave lions and cave hyænas prowled in their forests, long after his appear-

ance in these countries. Long, indeed, must those men, whose remains are found in the post-pliocene deposit of the valley of the Somme, and in those singular caves in Belgium, England, and Sicily, mixed with the bones of these extinct animals, and which have so attracted the attention of men of science,—long must they have preceded those men whose remains are found in the shell-mounds of Denmark. Long, indeed, must have been the lapse of time from the period since those extinct species of animals abounded in large numbers till they disappeared entirely from the face of the earth! Countless generations of those men whose remains are found in the Danish peat-mosses and shell mounds, lived, died, and followed each other in succession through numerous ages and centuries; but with those extinct animals the earliest of these generations were not contemporaries.

Of Sir Charles's work seven chapters are devoted to the glacial period, from the twelfth to the eighteenth inclusive; and although, in the present state of our knowledge, this period is not so intimately connected with the question discussed, there being, as yet, no remains of man found in formations belonging to it, or preceding it; still it is the limit to the formations in which those remains have hitherto been discovered.

"It often happens," says our illustrious author, "that when in any given region we have pushed back our geological investigations as far as we can in search of evidence of the first appearance of man in Europe, we are stopped by arriving at what is called the 'boulder clay,' or 'northern drift.' This formation is usually quite destitute of organic remains, so that the thread of our inquiry into the history of the animate creation, as well as of man, is abruptly cut short. The interruption, however, is by no means encountered at the same point of time in every district. Several Anthropologists are of opinion that man lived on the earth during most of the glacial period; but no sufficiently authenticated remains of him can, in the meantime, be pointed out to support this view.

These seven chapters on the glacial period form decidedly the most interesting portion of the book. The reader, who has already read all the scattered papers and dry tedious articles which have appeared on this department of geology, cannot but admire the plastic intellect of the writer who has reduced to order such a chaotic mass of details, and who has imparted beauty and fresh glowing life to a cumbrous heap of dull matter. His vivid description of the appearance which the surface of the earth presented during this singular period, when cold and ice ruled triumphant in the northern hemisphere, may well bear comparison with some of the most brilliant passages of our most distinguished historians. As we read these chapters we are transported

from the present world around us to that of hundreds of thousands years ago, when frozen seas occupied the space where well-peopled countries, abounding in numerous large busy towns, are found ; in which seas huge icebergs floated in various directions, as is at present the case in the Arctic and Antarctic Oceans ; when arctic mollusks lived in the Mediterranean ; when the favoured land of Italy felt the chill of a northern climate ; and when the glorious land of the East,

“ Where all save the presence of man is divine,”

was familiar with ice ; glaciers covering these Syrian mountains, which, myriads of years thereafter, supplied those far-famed cedars that were used by Solomon in the building of the temple.

Long did this period last ; its duration may, indeed, be counted in hundreds of centuries ; and while it lasted, mighty were the changes which were effected ;—land was submerged, and the sea rolled over it for many centuries ;—the bottom of the “vasty deep” emerged, threw off the yoke of Neptune, and claimed the right of being dry land ; mountains, thousands of feet high, whose summits were lost in the azure vault of heaven, sank into the depths of the earth, and many fathoms of brine flowed over them ;—the strata which formed the bottom of the abyss defied and overcame the pressure of the ponderous ocean, and sprang up in tall peaks to the sky ;—more than once were these strange things enacted ;—and lands which sank emerged once more, while those that had formerly emerged, were submerged. At one stage of the glacial period, according to that theory of emergence and submergence, which, in Sir Charles’s opinion, best explains the phenomena, the mountains of Wales were much higher than at present ;—at another stage 2,300 feet lower ; at one stage of it, Scotland was 2,000 feet below its present level, and other parts of Britain 1,300 feet ; then Great Britain and Ireland consisted of a few groups of small islands formed by the mountains of Wales, Cumberland, the Scottish highlands, Munster and Connaught, and, probably, of a larger island formed by the portion of England south of the Severn and the Thames. When we look at the maps at Chap. xiv. of this work, how strange are the emotions awakened within us as we think of the German Ocean and the Irish Sea forming one continuous body of water, studded with a few groups of small islands, which, during that period, represented the large islands of Great Britain and Ireland ;—when we imagine ourselves standing upon a lofty peak in one of those islets, looking around on a sea covered with enormous masses of floating ice, and rolling its waves over strata which now form the rich territory where the large and populous towns of Edinburgh, Glasgow, Manchester, and Liverpool, at present stand ; whose extensive commerce employs those innumerable ships which sail, with their

white canvas swelling in the gale, on those two seas on each side of Great Britain, which are the remains of that continuous ice-covered ocean !

Whether man existed while this long period of glaciation prevailed has not yet been determined ; although his remains being found in contact with glacial formations corroborates the opinion of those who maintain that he did. The formations of the glacial period itself, as clearly pointed out by Sir Charles, are, for the most part, destitute of organic remains ; so that, if any indications of himself or of his works are to be discovered in connection with this period, it is in preglacial strata that archæologists and geologists are to look for them. On this point Sir Charles remarks :—

“For the present we must be content to wait, and consider that we have made no investigations which entitle us to wonder that the bones or stone weapons of the era of the *Elephas meridionalis* have failed to come to light. If any such lie hid in those strata, and should hereafter be revealed to us, they would carry back the antiquity of man to a distance of time probably more than twice as great as that which separates our era from that of the most ancient of the tool-bearing gravels yet discovered in Picardy or elsewhere. But even then the reader will perceive that the age of man, though preglacial, would be so moderate in the great geological calendar, as given at p. 7, that he would scarcely date as far back as the commencement of the post-pliocene period.”

The last four chapters of the work are devoted to a consideration of the theories of “transmutation and progression,” of the doctrine of “variation and natural selection,” as propounded by Mr. Darwin, and of the “Aryan migrations and language.” Throughout these chapters we perceive a strong leaning towards Mr. Darwin’s theory of the origin of species. Were we to suppose this theory true, and assume that all the races of mankind which at present inhabit the earth, are derived from one original race by “variation and natural selection,” we may arrive at some notions of the antiquity of man, by observing any changes which have taken place in the characteristics of these races, during that period of time in which history, sculpture, and other human records lend us their aid. But so far as these yield us their light, no change which scientific acumen can as yet discover, has taken place in the physical or mental primary qualities of any race ;—the Silurians, the native race of south Wales, are still dark, and the Caledonians, the native race of the north-east of Scotland, red-haired and large-limbed, as they were in the days of Tacitus ;—the modern Gaul is as easily elevated and depressed in spirit and as full of curiosity as his ancestor was in the age of Cæsar ;—Sir Archibald Alison points out in his History of Europe, that the modern Iberian displayed the

same patriotic enthusiastic courage in defending Saragossa, as the ancient Iberian did in defending Numantia ;—under William the Silent, in defence of civil and religious liberty against the bigoted tyranny of Philip the Second, the Dutch manifested the same ferocious, sturdy, obstinate valour, and love of personal freedom, which led classical writers to designate their Batavian forefathers the bravest of the German nations ;—the modern Copts and Nubians are identical in form and features with the ancient Egyptians ;—the Negroes of to-day are identical with those of 4,000 years ago ;—the Icelanders, whose Scandinavian ancestors settled in Iceland upwards of a thousand years ago, vary not in form, features, or character, from kindred peoples on the European continent ;—and the peculiar physical and mental qualities of the same Scandinavian race, blended in various degrees with those of the Celts, are readily distinguishable in the Hebrides, along the shores of the western highlands, and in the east of Ireland ; where the intermixture, although it took place a thousand years ago, has produced no new uniform race, but merely a mixed people. If all these races have been developed from one stock, and become what they are by a certain “law of variation and natural selection,” the rate of change has been so slow as not to be perceptible in 4,000 years ; now, a change going on at an uniform rate, which is not perceptible in such a length of time, would not be very striking in ten times this number of years, or 40,000 ; and we may safely assert that it would not produce so great a difference as exists between the Australian and Scandinavian in ten times that number of years again, which would amount to 400,000 years. Were this theory therefore true, it would carry back the antiquity of man far beyond anything which geology has hitherto brought to light ; but, however ingenious and attractive it may be, and however readily it may explain the phenomena of organic life, it must be said that in its present form, it is not thoroughly borne out by facts ; while numerous objections, founded on the peculiar conditions of animal generation and descent, may, more especially, be brought against many of its extreme points.

“The Origin of Species,” displays the immense physiological information and rare talents of the author ; while the suggestiveness of the general views, and the bold, rich, glowing speculative vein of thought which pervades the work, entitle it to hold the first rank among books on the philosophy of science ; yet, in the meantime, we must express our dissent from its extreme conclusions, and our doubt of species having been produced within the same range of influences as varieties are. With all its faults, the student of nature can hardly take up any manual which gives a more profound insight into the laws that govern the animal world than Mr. Darwin’s work ; and Professor Huxley

may truly say that the Darwinian theory bears the same relation to a true physiological science, as the Copernican theory does to a true astronomical one. This comparison is altogether judicious ; for when Copernicus placed the sun in the centre of the solar system, he laid the foundation of a true astronomy ; but he made the planets move round him in circles ; and this circular motion assumed for one which is really elliptical and spiral, is not unlike the doctrine of "variation and natural selection" carried to extremes. Let the *circularity* of the doctrine be a little modified and some *eccentricity* introduced, as has been done with regard to the Copernican theory, and there is a probability that the true theory is found. That species have been produced by "natural selection and variation," independently of general changes in the condition of the globe, is a point highly questionable, notwithstanding all that is said by Mr. Darwin on the pigeon race. The production of an endless number of varieties is highly possible ; but we hold that there is a limit to their range. In looking at the animal world around us, we perceive that every species has a range of modification, which is entirely dependent on certain conditions ; but the several modifications seem to resemble imperfect circles, an endless number of which can be described, all varying from each other, but bearing a resemblance more or less close to a perfect one. A breed of oxen, sheep, or horses, may be improved to a certain pitch ; but here the improvement ceases ; and, in a similar manner, education and other influences produce certain changes on the races of mankind ; but to these changes also there is a limit—a barrier which cannot be passed. Nowhere has it been found that civilisation or climate has produced any effect on one race, tending to change it into another. In the East Indies Frisians have not been converted into Malays ; in South America Iberians have not been converted into Red Indians ; the Portuguese have not been transmuted into Negroes or Caffres in Africa, or into Chinese in Macao ; the French are the same race in Cayenne, Guadaloupe, Louisiana, and Canada ; in every zone, and under the influence of almost every climate, these peoples have retained the peculiar physical and mental characteristics of the races to which they respectively belong. If mankind were originally one race, the most probable explanation of the present diversity is, that it has been produced by great general changes in climate, as well as in other physical conditions of the globe. We learn from geology how often the climate of the earth has changed ; but we do not yet, very well, understand how those changes were brought about ; probably astronomy may, in a few years, throw some light on this obscure subject, and reveal the existence of some conditions by which the earth and her inhabitants are influenced at some periods more than at others, exactly

as is the case with the four seasons of the year. Then it may, perhaps, be ascertained that diversity of race has been produced in a shorter time than that in which the doctrine of "variation" would account for it. Eminent Anthropologists point out the recurrence of mixed races to the original native type, after a lapse of centuries, and adduce Spain, France, and Italy, as instances of countries in which the blood of the intrusive conquering peoples, has, to a great extent, disappeared, and whose present inhabitants are almost identical in racial qualities with those who preceded the intermixture with invaders. In families we observe that atavism is a wonderfully prevalent law; that there is nothing more frequent than to observe children closely resembling grandfathers and great-grandfathers; that, sometimes, the different features are inherited from different progenitors; that a peculiar form of nose, eye, chin, hand, or foot, may be traced out among several third and fourth cousins; that a colour of eye, which has disappeared in two generations, returns in the third; and that the colour of hair and shape of head, which have disappeared in three generations, return in the fourth. We observe, when parents differ in the colour of the hair, that, usually, the children have, alternately, the hair of father or mother. If the father has red hair and the mother flaxen, these colours do not mix, but the child is either flaxen-haired or red-haired; or if grandfather or grandmother was brown or black-haired, probably brown or black-haired. The same remarks apply to all the different parts of the body,—to the complexion, the colour of the skin, the voice, and the walk.

A similar law of recurrence pervades the animal kingdom, and is observed in families of horses, swine, oxen, sheep, dogs, and cats. The following is an instance of the law of succession in the case of cats:—The daughter and grandmother are similar in colour and form, the colour of each being dark grey spots on a white ground; the mother and great-grandmother, also, resemble each other in form and colour, the colour of each being red spots on a white ground. Similar instances might be multiplied in the case of other animals. It will be perceived, then, that here we have a limit to endless variation, by which varieties are circumscribed and held to a central normal type. When animals are brought from one country, or continent, to another, they undergo some change, as the case may be, corresponding to the new influences brought to bear upon them; but in a few generations they acquire a fixed form and character.

The usual boundary employed to separate species we believe to be wrongly fixed. Whether species breed together or not depends upon their nearness or remoteness. Those which are remote from one another do not breed, those which are somewhat near produce hybrids which do not breed with one another, and those which are nearer pro-

duce a mixed breed the duration of which is proportionate to their proximity. Difference and permanency of type is the true distinction of species. A modification of a permanent type constitutes a variety. The permanency of species may be said to be limited by geologic changes, accompanied by general changes of climate ; while variety is dependent on partial differences of climate in different parts of the earth, on local circumstances, and on artificial expedients. We learn, from geology, that the crust of the earth has undergone numerous successive changes, and that while these changes were being effected old species disappeared and new ones appeared. This appearance of new species and disappearance of old ones, is, certainly, more satisfactorily explained by the theory of transmutation than by any other hitherto offered, and this transmutation has, doubtless, been effected by peculiar conditions of the earth, and not in the ordinary manner in which varieties are produced. The strongest objections made to the theory of transmutation have, no doubt, been made, principally, in consequence of the conclusions to which it leads, viz., in uniting man so closely with the animal-creation ; but granting man to be developed from the lower animals, it does not necessarily make him one of them, any more than it makes an animal one of the vegetables by conceiving the animal kingdom to be derived from the latter. The several divisions of nature pass imperceptibly into one another ; and, as the line of demarcation is not very distinct, the difference is more properly seen at a distance from the boundary.

The different races are, no doubt, of different antiquity, and the lower ones, assuming the theory of progression to be true, are the oldest. Ten thousand years are but as yesterday in the antiquity of man ; races are, to all appearance, extinct now which inhabited the world myriads of years before Celts, Scandinavians, Saxons, Slavonians, or Iberians were in existence ; and, probably, Negroes, Hottentots, Australians, and Red Indians, played their part on the face of the globe a hundred thousand years before white skins, blue eyes, and light hair appeared in Europe.

Those ancient skulls which have been discovered within the last few years, have led to rare and interesting discussions, and their peculiar development strongly supports the theory of transmutation and progression. The Neanderthal skull has certainly acquired a celebrity which we may be sure its owner never expected in his lifetime ; and has suggested as many suppositions as were suggested to Hamlet by the skulls thrown up by the gravediggers. Several scientific men think that this skull belongs to an individual of a race which became extinct thousand of years preceding the historic period, but we must be cautious in our speculations until more of the kind are found.

The twenty-third chapter of Sir Charles's work on the Antiquity of Man is devoted to the subject of language. Philologists have discovered widely prevailing analogies among numerous groups of languages, in consequence of which they have been led to examine their structure with care and attention; and, from vigilant research, they have arrived at the conclusion that each of these groups has been derived from one common tongue. The most important of these groups is that usually called the Indo-European, or Aryan. These Aryan languages extend from the Ganges to the Atlantic; and it would of course, have required a great many ages for one language to ramify into so many others, which are now so widely different that common affinities can only be perceived and traced out by the ablest scholars. Of these languages Sanscrit is the farthest east, and Gaelic the farthest west. Were there a rate of change known so far as regards speech, it can readily be conceived that the time which has elapsed since the Aryan language was one till the present, might be estimated; but the rate at which language undergoes change, is so dependent upon peculiar circumstances, and so inconsistent, that it is exceedingly difficult to render its mutations available as a measure of duration. The Aryans are supposed to have extended themselves from central Asia eastward into India, and westward into Europe, forming several nations both in Europe and in Asia; but a strong objection to this theory of Aryan migration is, that the peoples and nations which speak these cognate languages, consist of widely different races, and that if they were all derived from this single Aryan race, a much larger time must be allowed for their conversion into several new races than the advocates of the Aryan theory assign to those migrations; but on the supposition that the Aryans were a conquering people, who subdued aboriginal races, intermixed with them, and imposed their language upon them, this difficulty is removed. In order to give a rational explanation of the phenomena of anthropology, it is certain that a much higher antiquity must be assigned to man than has hitherto been done, and doubtless Sir Charles Lyell has underrated rather than overrated it. A more temperate treatise than his could hardly be written on a question which, at present, excites the strongest interest in the scientific world.

The handling of such a subject as the Antiquity of Man, as may be easily conceived, requires to be done with circumspection; as any views that may clash with the present accepted interpretation of holy writ are sure to elicit the cry of heterodoxy from the bigoted; and disagreeable contests between the teachers of Christianity and the votaries of science, should be, as much as possible, avoided. That the teacher of religion should feel alarmed at any new speculations

which he may think lead to the diffusion of theological error, is nothing strange ; and, supposing he may give them undue opposition, he is, to a certain extent, to be excused for his zeal and well-meaning intentions ; also, if the enthusiastic man of science starts bold hypotheses, not sufficiently supported by facts or observation, he is still entitled to be treated with a degree of indulgence by the religious community. It is very much to be regretted that almost every advance which has for centuries been made in science, has been, at the commencement, violently opposed by many of the clergy. Surely the strong opposition which has so frequently been offered to new views on such matters, subsequently established, ought to teach those who are ready to risk the truth of scripture on received explanations, more caution. It may be safely affirmed that many of the current interpretations of the sacred text, cannot be reconciled with the facts of science ; but it is to be hoped that some of our erudite and profound divines will give this question their calm consideration, and so throw such light upon it as shall remove the contradictions between christian theology and anthropology.

POSITION OF THE FORAMEN MAGNUM.

By PROFESSOR JEFFREYS WYMAN, CORR. Memb. A.S.L.*

THE fact, to which attention was called by Daubenton, more than a century ago,† that the foramen magnum is situated farther back in apes than in man, naturally led anatomists to inquire whether any of the human races more nearly approach the apes in this respect than the rest. Soemmering made the assertion that such is the case in the Negro, and his statement has been quite generally repeated by subsequent writers. Prichard, however, satisfied himself that such is not the case, and after having examined "many Negro skulls," states that the foramen corresponds in position with that of the white races, viz. : "exactly behind the middle of the antero-posterior diameter of the basis cranii."‡ He, however, finds it necessary, in order that this should be the case, to make some allowance for the projection of the jaws. We have seen no account of the manner in which the measurements on which this opinion rests were made, except that the jaws

* From the *Proceedings of the Boston Natural History Society*, vol. x, 1868.

† "Sur la Difference du Grand Trou Occipital dans l'Homme et dans les autres Animaux. *Mémoires de l'Acad. des Sciences*, 1764.

‡ *Researches into the Physical History of Man*, vol. i, p. 285, London, 1851.

were included when the antero-posterior diameter of the head is spoken of. It is obvious that in comparing more or less prognathous races, the position of the foramen magnum may be found to vary, although there may be no variation when the cranium proper is alone considered. In other words the bones of the face may vary independently of the cranium.

The more common method adopted has been to measure from the anterior edge of the foramen magnum to the edge of the alveoli in the middle of the upper jaw, and from the foramen to the most prominent point of the occiput. It seems to us more correct to determine the position of the foramen, with regard to the cranium, than with regard to the cranium and face, especially as the chief interest which attaches to the foramen is an index of the relation of the spinal marrow to the cerebral mass.

In making the measurements on which the following table is based, we have kept this circumstance in view, and have adopted the following method. The long diameter, from the glabella to the occiput, having been previously measured with the callipers, is made horizontal by bringing the two ends of it to correspond with the points of the indices on the graduated uprights, and on which the indices are adjusted to the same elevation. Two moveable plumb lines, suspended from a wire stretched across the upper part of the frame, are then so adjusted that one dropping through the foramen magnum touches its anterior border, while the other touches the most prominent part of the occiput. The position of the foramen is indicated by the ratio of the distance comprised between the two plumb lines, to the long diameter of the cranium proper. The number expressing this ratio may be called *the index of the foramen magnum*, thus conforming to the method of expressing the ratio of the breadth, or the height to the length. When it is said that the index of the foramen magnum is 45.4, it is understood that the distance of the anterior edge of the foramen from the most projecting part of the occiput, is 45.4 parts of the long diameter, this last being considered 100, and both being projected on to the same plane.

	20 White.	5 Tsuktehl.	17 Negroes.	28 S. Islanders.	19 Hindoos.	45 N. American Indians.	3 Gorillas.	1 young Gorilla.	1 Chimpanzee.	3 young Chimpanzees.
Maximum,	50.0	47.2	48.7	47.5	45.4	47.8	26.8			39
Mean,	45.6	45.3	44.4	41.8	41.4	40.9	22.7	40	21	35.3
Minimum,	41.7	44	38.7	36.1	35.6	34.8	17.7			32
Range,	8.3	3.2	10.0	11.4	9.8	13.0				

To avoid error, it is important that the long diameter of the head should be made as nearly horizontal as possible, for the foramen magnum being on a higher plane, as the long diameter is tilted backwards or forwards, moves through an arc of a circle, which changes the position of the point where the vertical cuts the horizontal line.

The preceding table, in which the number of the skulls of each race examined is given at the top of the respective columns, shows that there is an actual difference in the position of the foramen magnum in the races compared, and of such an amount as to make it desirable to test the result with much larger collections, in order to determine more precisely the value of the position of this opening as a race character.

As far as this table can be accepted, it shows that while there is a difference between the human races as regards the position of the foramen magnum, it is quite small when compared with the difference between the human races and the apes; and, contrary to Soemmering's assertion, the Negro does not make the nearest approach to the latter; and on the other hand, although the negro cranium does not precisely agree with that of the white races, as stated by Prichard, it very nearly approaches it. It is the North-American Indian which has the lowest index.*

THE PROCESS OF DERIVATION OF THE SPANISH LANGUAGE FROM THE LATIN.

BEING PART OF THE "DISCURSO PRELIMINAR" TO THE "ROMANCERO Y CANTIONERO." BY DON AGUSTIN DURAN.

Translated from the Spanish by J. G. Hincks.

It is difficult, if not impossible, to determine the period when the modern languages, emancipating themselves from the Latin, became common, and were constructed of forms essentially different to those of the primitive tongue. Observing, however, the course prescribed in similar cases by nature and necessity, we may presume somewhat upon the time and manner of their formation. This began with the

* The position of the foramen magnum, as will be seen by this table, is very different in the young from what it is in the adult apes, the former approaching much nearer to the human races than the latter. We have pointed out in a former volume of the *Proceedings* (ix, p. 203) other striking resemblances between the cranium of the young gorilla and the adult man, which are much diminished as age advances.

conquest of the Western Empire by the barbarous nations of the North. From that time, undoubtedly, the vulgar Latin began to decay, degenerate, and become mixed, ceding in its difficult and complicated construction to the rude intelligence of the conquerors. Its words being corrupted, it also adopted the simple syntax of the barbarous Northern tongues, and lost the rich and sonorous prosody belonging to languages of Oriental origin.

The rustic or provincial dialects (*linguas rústicas**) were produced by corrupting the Latin pronunciation, altering the sound of the letters, and forming their nouns, adjectives, and even verbs, some from the root only, † others from the desinences of some corresponding case or tense of the mother tongue.‡ The constant and most essential difference between the Latin and the modern languages derived from it, consists in the latter having—

1st. Suppressed the declension of the noun ;

2nd. Employed the anteposition of particles to distinguish the case ;

3rd. Adopted articles to determine gender and relation ; and

4th. Substituted for the direct conjugation of the passive voice, the union of the auxiliary with the past participle of the verb.

It is worthy of notice that the pronunciation of these languages §

* Thus are named the different jargons formed by corrupting the Latin prosody, pronunciation, and syntax.

† The *Provençal* for instance. This language, as well as the *Francica* or *Theotisca*, was still in existence at the beginning of the French monarchy. The first must have originated among the Goths, who occupied the north of Spain and the South of France ; traces of the formation of some of its words are still to be met with in very old Latin documents. Several decrees ordered that sermons should be preached, and religious instruction given in, the *linguas rústicas* ; and, according to Meyer, in the seventh century, the Bishop of Tournay and Montemolin, elected after the death of St. Eloi, was as learned in the *Theotisca* idiom as in the Latin. In the eighth century, when the litanies were sung, the people replied *ora pro nos*, suppressing the desinence of *nobis*, and *tu lo juva*, placing the *Provençal* particle, *lo*, before the verb instead of the Latin pronoun. In the document of the Moorish king of Coimbra, which is cited in the fifth note, we find words entirely *Provençal*, *e* for *et*, *esparte* for *esparce*, *pecten* or *peiten* for *pectent* or *pendant*. According to Luitprand, in the year 728, the Catalan and the Valencian were considered established languages in Spain, and were consequently formed before the Arab conquest. This gives probability to the conjecture that the *Provençal* took its origin among the Goths, who inhabited the south of France. Whoever cares to enter more thoroughly into this question, should consult the first volume of Raynouard's *Poesias originales de los Trovadores*.

‡ The Castilian, Italian, and French.

§ Each was distinguished by its affirmative particle, the *Provençal* being called the language of *Oc* ; the *Walona*, afterwards the French, that of *Oui* ; the Castilian, Italian, and Portuguese, of *Si*, and the Teutonic, of *Ja*.

is more often more closely resembling the original, and less contracted, in proportion as the nations who speak them approach the South, thus proving how climate influences the vocal, guttural, and aural organs. We must, however, except the *Provençal*, which for its construction adopted Latin roots only. For this reason, and because it was the first formed, it serves as an intermediate step to the others.

But before any of these real languages, irregular jargons were formed, like those we now call *algarabias* or *francas*, which are used by nations who speak different idioms to communicate with each other.

In Spain, as in other parts, arose many of these jargons or *linguas rústicas*, and among them undoubtedly that, which, cultivated and perfected, is now the dominant language,—the Castilian. Springing like the others from necessity, at first rude and incomplete like them all, it alone could be employed in arranging the indispensable communications between the conquerors and the conquered. The latter, being weakened, had no more power to preserve their dialect, than to defend their homes, and the former, a barbarous race, were neither able nor willing to study a language which, besides being complicated and difficult, had the disadvantage of belonging to a conquered and degraded race. The first, then, not attempting to struggle with the Latin idiom, and the last, not accommodating themselves to the rudeness and poverty of the Northern tongue, in each province resulted the final triumph of the *lingua rústica* which was most cultivated and complete, and with it the ruin, not only of its equals, but also of its elementaries.

No relic of the period before the Moorish invasion remains to us, written in that *lingua rústica** which, when perfected, was called Castilian, but the old narrative romance is still in existence, although belonging to a much later epoch, and modernised or altered by oral tradition, yet preserves so rude a diction and so barbarous a construction, that it may be easily inferred how informal and irregular must have been the language employed in anterior compositions.

* Before the Gothic invasion, the Cantabrian, Phœnician, Greek, Hebrew, Chaldæan, Latin, and Celtiberian languages were spoken in Spain. The Arabic afterwards became general, and replaced them, putting an end to them in the provinces long possessed by the Moors, and in other parts being substituted for those which had formerly existed there. All the above-named languages contributed some words and etymologies to the Castilian; but the greater number of these belongs to the Latin. The Arabs also rendered tribute to the tongue of Virgil and Cicero; since, among the chronicles of Bishop Idacio, is a document made by the Moorish king of Coimbra, in the year 734, which begins thus:—"Alboucen Iben-Mahumet Iben-Tarif, bellator fortis, vincitor Hispaniarum, dominator Cantabriæ Gothorum, et magnæ litis Roderici," etc.

It would be useless, were it possible, to ascertain whether these primitive people, after having discovered alphabetical characters, used them in writing poems before chronicles, or verse before prose. But it is certain that all, or nearly all, the civil and religious traditions of the origin of communities have been preserved in metrical language, because, this being an appropriate means of impressing on the memory what was worthy of remembrance, it must have supplied the place of writing in times when the latter art was unknown or little used.*

* The remote traditions of the origin and heroic age of communities are transmitted to us in poems, which appear rhythmical in language, and sententious in style. Although the learned Don Tomás Sanchez, opposing this idea, tries to prove that the books of Job and Genesis were originally written in prose, he does not succeed; because, not understanding Hebrew and Syriac prosody, he cannot well judge of the rhythm of those languages. On the contrary, taking into consideration the facts proved, and the analogous consequences deduced from them, we must needs believe that the books of Job and Genesis were composed in metrical language, because they consist of sententious versicles, which contain the idea within determined limits,—an art, perhaps, more difficult than that of versification, except when induced by versification itself. But when Sanchez stated his opinion respecting these books, he did not consequently prove that formerly there were not other works written in verse. The civilisation of the Hebrews and Egyptians was far too advanced for us to suppose that no other writings were then in existence, though they have not descended to us. Besides the enigmatical Veda of the Brahmins, the Persian traditions of the Ghebers, the Zendavesta of the second Zoroaster, the books of the Egyptian Osiris, and the Greek Orpheus, the Koran, and the Arab poems which precede it, appear written in metrical and sententious language. The Edda, the Voluspa, and the Havanna* strophes of the second Odin, the German Niebelungenlied, the Druidic and Celtic poems, and the Scotch ballads, which all belong to the civilisation of the north, and preserve its traditions,—all seem to be metrical works. If we descend to the relics of the middle ages, written in the *lenguas rústicas*, poetical compositions present themselves before prose. In the eleventh century appears a Portuguese poem on the *Perdida de España por el Rey Rodrigo*; in the twelfth, follows the Castilian *Cid*; and in the thirteenth, the poems of Alfonso el Sabio hold a prominent place. The *Cantigas* or *Lays*, and the *Provençal tensidues* are of the date of the formation of nearly all the *lenguas rústicas*, and sustained their brilliancy until the crusade against the Albigenes destroyed the race of poets, and the language in which they composed. The works known to us, written in the Breton idiom of the province of Wales, and that of the Walones, much earlier than the book of *Bruty-Brenhined* (*Bruto de Bretaña*), belong to the end of the twelfth century and the beginning of the thirteenth. They are chivalric and genealogical poems, like *Rou* and *Florimon*, and others, in which are reproduced, though in an altered form, many of the Celtic and Teutonic traditions. No doubt historians, legislators, and other members of

* Probably the Hava-mál, contained in the Elder Edda.—TRANSLATOR.

Cadence and harmony, and consequently versification and song, have been the first resource of nations for transmitting to posterity the oral traditions illustrated by the rude monuments of the earliest epochs, and for preserving their traditions, while as yet there was no alphabetical system.

It is an undoubted fact that the latter being invented, was first used to write in verse the works committed to memory, the importance of which was so much the greater that in them was deposited and arranged whatever was known of history, civil and moral laws, and even imperfect and struggling arts and sciences.

The primitive languages are always more sonorous and harmonious than those secondarily formed in each country, but climate having so great an influence on the delicacy of the organs, particularly those of hearing and pronunciation, the oriental tongues far surpass those of the north in the above-named qualities. Primitive languages being founded on the direct imitation of natural sounds, necessarily abound in imitative harmony. The peal of thunder, the noise of the torrent, the soft murmuring of the brooks, the sweet song of the birds, the roar of the lion, such were the first sounds imitated by men to communicate one to another the impressions they received and the necessities they experienced. Savage languages are full of prolonged, rather than articulate, sounds, and seem better qualified to depict to the imagination than to speak to the understanding. Thus it is not strange that primitive nations, according to the greater or lesser mildness of their climate, sooner or later discovered the metrical system by which, in various poems, they have transmitted to us their various traditions. Perhaps there might even have been in certain lands a social epoch, when, under the almost exclusive influence of imagination and a sonorous and harmonious language, it was easier to be poet than orator. If such an epoch there ever were, it must have drawn to its close in proportion to the progress of civilisation, when men's ideas, multiplying with their necessities, a greater mass of intelligence was developed, and they found themselves obliged to create words to express abstract ideas, whose perfect analysis exacted the sacrifice of imitative harmony to method and exactness.

The majority of the modern languages is derived from the Latin, but as these imitated the sounds of the words, and thus indirectly natural ones, they lost the rich and sonorous prosody of the original, and are wanting in the rhythm and cadence of its versification. Thus

the primitive communities, found a substitute for alphabetical characters in versification and harmony, and employed them to preserve the laws, doctrines, and more important facts, which, when writing was discovered, were transferred to it, the same form being retained in preference to any other.

failing in prosody, the modern tongues have been obliged to adopt, in poetry, a metrical system which founds its harmonic resources not on the measure and time of pronunciation, but on the determined number of syllables, the combinations of a certain periodical rhythm and the art of placing the accents.* Such are, in general, the bases of the modern metrical system, so essentially different to the ancient.†

Thus in Spain, as in all Europe, were established after the Gothic conquest, various jargons or *dialectos rústicos*, which, with the native languages anterior and posterior to the Roman domination, increased the number existing in each province (see note 2, p. 2). Such a multitude of tongues, no doubt, produced great confusion, and this contributed, in no slight degree, to prolong the existence of Latin. It is necessary to the populations and provinces which had adopted different idioms, to make them understood by each other. After our Peninsula was invaded by the Arabs, the language of the conquerors became common, and in the provinces they governed caused the decay of the others, Latin included. But this did not happen in those parts whither the Arab rule had not extended, or where it was only temporary; there the existing languages were preserved and perfected.‡ Among them I shall distinguish, on account of its connection with the subject of the present essay, the *lenguaje rústico* of Asturias, which afterwards, extended and cultivated with the reconquest of the provinces, became the dominant language of Spain.

Before Arab civilisation fell, the remains of the Roman and Latin, ceasing to be a living tongue, was only employed in writing the laws, public acts, and learned works. For this reason no document of ancient date in the Asturian dialect remains to us, since, though rapidly extended by the continued triumphs of the Christian arms, it was yet neither perfect nor exact enough to be used in public assemblies or in the transcription of contracts and legislative codes.

The poem of the *Cid*, the translation of the *Fuero Juzgo*, § *las Par-*

* This was not fixed, with any degree of certainty, until the sixteenth century.

† Vitiated, corrupted, and even forgotten, as the Latin pronunciation was, they began to compose it in hymns; in which we find syllabic number and consonant sounds supplying the place of long and short. Perhaps this was the beginning of the formation of the new metrical system adopted by the modern languages.

‡ The Biscayan provinces, and part of Navarre, preserved a Celtic dialect; the Galicians and Portuguese formed theirs by the admixture of the Suevians with a more contracted Latin than that used by the Castilians; and the Catalonians and Valencians adopted the Provençal with some modifications.

§ The translation of the *Fuero Juzgo*, of Cordoba, preceded and prepared the way for the work of the *Partidas*, projected in the reign of Ferdinand III, *el Santo*.

tidas, and the *Coplas* of Don Alfonso el Sabio, are the most remote written monuments to show us the state of the Castilian language at the end of the twelfth century and the beginning and middle of the thirteenth. The grace and boldness displayed in the style of the last two of these documents prove that the language must have undergone great changes before arriving at the point of flexibility and perfection in which we find it. It is impossible that it could have become so correctly formed and complete without having been previously cultivated by the learned, and others, in composing, if not in writing, works of much earlier date than those mentioned. It cannot be said with certainty whether these anterior works, the poem of the *Cid* excepted, were composed in prose or metre, but I am convinced that it was the latter, because people being obliged to trust to memory in the absence of writing, the object of preserving them would not be attained if suitable means were not employed. My conjecture rests upon the fact that the diction of the *Partidas*, polished, noble, and correct, already possesses the flexibility, harmony, and aptitude for good prose that languages acquire only after having been subjected to the turns and transpositions required in versification.

The irregularity and rudeness of the phrases, the want of grammatical sequence and connection between the ideas observable in the poem of the *Cid* induce me to consider it as an intermediate step between the *dialecto rústico* of the Asturians and the Castilian language of the thirteenth century. I have no hesitation, then, in looking upon it as a work composed in the twelfth century by a learned man of that time, who intended, though how little he succeeded is very apparent, to imitate Latin verse. In a word, I see in this poem* a progressive step taken by the language before the date of the *Fuero Juzgo* and the *Partidas*; but, considering its art and tendency to imitate models unknown to the *gente rústica*, I cannot consider it either the first production in the vulgar idiom, or look upon it as a specimen of popular poetry. Similar in style, but superior with respect to the latter point, we find the poems next in order, such as that of *Alijandro*, those of *Berceo*, and the *Archipreste de Hita*, which belong to a school imitating the Latin forms or the reminiscences belonging to them.

Besides, if we observe the slow march of nature towards perfection, we shall find that, notwithstanding the imperfect style and language of the *Cid*, we cannot imagine them to have arrived at even that point of cultivation without having been preceded by continued anterior

* In this historico-romantic poem, an attempt is made to imitate Latin verse; it is a pity that it is so badly executed. Notwithstanding its intolerable defects, the work has a certain candour, dignity, and interest which prove its author to have been a learned and, at times, an inspired man.

attempts, less studied and artificial, and better adapted for transmission to memory.

As the poem of the *Cid*, and others of its school, are wanting in the qualities proper to popular poetry, in those of another class, more easy, natural, simple, and remote, we must seek its original type. I say more remote, because it would be absurd to believe that from the point when Latin ceased to be a living language until the twelfth century, there were no songs of love and war, no hymns composed in the vulgar tongue, in which the people preserved, orally at least, their sentiments, fables, and history. We may therefore infer that the Castilian language and poetry began to progress seriously and uninterruptedly from the middle of the eighth century, when the independent Spaniards, who had taken refuge in Asturias, formed an established power and a true monarchy. In the time elapsing between the Arab invasion and the ninth century, several Christian states arose in the peninsula, and among others the kingdom of Leon was formed, consolidated and governed by Alphonso II. Then among his vassals began to be cultivated, made general, and established, that *dialecto rústico*, which afterwards, under the name of Castilian, became the principal language of Spain, triumphing over the primitives, such as the Biscayan, and the secondary tongues, like the Lemosino and the Galician, which were henceforward only spoken by the vulgar in certain determined districts.

The Catalonians and Arragonese maintained a treaty and communication with France and Italy, these countries having adopted the Provençal language, which, older than the other *lenguas rústicas* and being also their precursor, was first perfected. Those people, consequently, became civilised before the Asturians, who, surrounded by inaccessible mountains, were able to maintain their narrow limits only by the point of the sword, and at the cost of much blood shed in cruel battles with the Moorish usurpers of the Spanish soil.* Some glimmerings of social culture undoubtedly appeared in the reign of Alphonso II. Already the valiant Asturians began to breathe freely within more extended frontiers, their kingdom was stronger and better regulated, and they were forgetting, with their fears, the concentrated hatred which at first made them reject all amicable treaty with the Arabs, and repulse the enlightenment, arts, and civilisation brought by them into Spain. Then the enthusiasm for glory was substituted with

* We should, therefore, consider Asturias the cradle of the national language and poetry, without any admixture of foreign imitation. The inhabitants of this province had enough to do in repulsing the Moors, who left them no time to study Virgil and Horace, nor to appreciate the literature of their enemies, the Arabs.

advantage for blind courage, springing from the necessities of offence and defence. The chiefs who led the Christian forces to the field of honour, returned to their homes laden with booty and objects of luxury taken from the enemy. As an action of thanksgiving to the god of battles, they made use of their riches in erecting temples and endowing churches, and employed the arts, imperfect as they were, in raising monuments of gratitude to the Supreme and Protecting Being, who had assured them the victory. By this time Latin was already almost unknown, and the vulgar tongue could not have remained more idle than the arts, it being very probable that while these were employed in ornamenting the temples, it was used by the soldiers and people to express their sentiments, celebrate their chiefs, and preserve the memory of their deeds in metrical language. We do not know what these songs were, none of them have reached us, but we may infer their existence, deducing it from the natural order and necessity of things. Remarking, however, the character, nature, construction, and style of the most ancient language of which traces remain to us, and comparing them with the *Bable** dialect still preserved among the Asturians, I presume that the primitive songs must have consisted of short verses whose intonation gave the exact number of syllables, and in which the liberty of lengthening or shortening them in pronounciation supplied the place of rhythm and true consonance. If the necessity of these supplementary means to a complete and fixed system of versification is made known in reading the poems of *Alejandro*, those of *Berceo*, and of the *Archipreste de Hita*, composed by men of talent, with how much more reason will it not be found in the popular, chivalric, and historic romances belonging to and made by the *gente rústica*, which, if I dare not place them in so remote an epoch as that of the birth of our poetry, I believe at least retains traces of this primitive form in which versification first arose among us. In them are preserved, if not the words, yet the construction and cadence of the Asturian *lengua rústica*, and in many parts we can even trace the dialect now spoken by the inhabitants of that province. Taking into consideration the

* Few provinces of Spain have preserved more relics and records of venerable antiquity than Asturias. Its dialect, known as the *Bable*, is sonorous, smooth, and, if not extremely rich, less poor than is sometimes believed. In the interior of Asturias, the same language is used as was spoken in Spain in the middle ages; and many phrases and expressions, preserved in the poem of the *Cid*, are familiar to the Asturian labourers. Those words which were acquired from the Arabs, did not pass the boundaries of the province. It would be a pity to allow a dialect to be lost, which, properly studied, might explain the etymology of many Castilian words, and whence we could supply ourselves with expressions we might be in need of, instead of borrowing them from foreign languages.

rudeness of some portions of the chivalric and historic romances, and returning to the impression they make on me, I am quite convinced, though I have no means of proving it, that they are fragments of works of still greater antiquity, which have descended to us intercalated with more modern productions.

LE HON'S FOSSIL MAN.*

THE science of Archaic Anthropology may be divided thus:—Subjects which the English understand and the French do not; subjects which are understood by the French and ignored by the English; and subjects which neither of them understand. It might be supposed that the third category would be the largest, but, on careful consideration, most heads are comprised under the second; whilst the first is a mere box for microscopical objects. For this reason M. Le Hon's excellent book will prove highly interesting to Englishmen, and will place them *au courant* with the present state of the subject on the Continent. The whole book (considered as an avowed compilation) is one of the most valuable practical contributions to Archaic Anthropology that has ever been published. Far more convenient in form, written in better language, and more systematic in arrangement, than Sir C. Lyell's *Antiquity of Man*, it forms one of the most instructive works we have ever read; and we discern with pleasure that the friend of the accomplished Director of the Bruxelles Museum, Dr. Edouard Dupont, has incorporated in this work all that is now known about what has been infelicitously named the "Antrology" of Belgium. The discovery at La Naulette of the famous pithecoïd jaw (figured in this work), which is one of the most important *pièces justificatives* in the history of ancient man, was almost surpassed by the "find" in the *Trou Magrite* of the remains of cave-lion, which had reversed the usual order of things, and afforded sustenance for man. The Daniel who was in the lion's den at the *Trou Magrite* appears to have made a hearty meal on his equally carnivorous companions. We have rarely such valuable evidences of the customs of prehistoric man afforded to us; and we can only regret that, with the exception of Mr. Godwin Austen and Mr. J. Jones, so few English take much interest in Belgian discoveries. We trust that the investigation which was inaugurated by the Anthropological Society of London in 1866, acting in co-operation with Dr. E. Dupont, will

* *L'Homme Fossile en Europe; son industrie, ses mœurs, ses œuvres d'art.* Par H. Le Hon. Second edition, Bruxelles, 1868.

not be allowed to be altogether forgotten. The specimens upon which the antiquity of the human race can be most conveniently tested are those from the Belgian caves. The Aquitanian relics are of late date, and less value. The most important are those from Bruniquel, described by Professor Owen some time ago before the Royal Society, but of which the description is as yet unpublished. Some others are being described in the work published according to the will of the late Mr. Christy, including contributions by M. Lartet, the prince of French palæontologists, edited by Professor Rupert Jones. There has been certainly too much said about this work.

It has been several times attempted by the Rev. Dunbar Heath, to identify in some way the Aquitanian cave-dwellers with the "mute men," which, according to his theory of the origin of language, preceded the Aryan races in Western Europe. But when we examine the cranial characters of the skulls from Les Eyzies, we have no ground whatever to infer that they were destitute of language. It seems, moreover, improbable that a race which, on the whole, appeared to have possessed a considerable amount of knowledge of elementary art should have been destitute of language. It seems also scarcely logical to identify the "mute men" (if they ever existed) with the race of Aquitaine, any more than with the more pithecoïd and apparently more degraded individuals who lived at La Naulette and at Arcis. If either race was mute, the most pithecoïd and the least civilised should be chosen, in preference to the cave-dweller of Aquitaine, with his artistic skill and his vaulted cranium. The ages of the high level and low level gravels of the Somme valley are, since the publication of Mr. A. Tylor's paper before the Geological Society, exceedingly doubtful, and, for this reason, we refrain from synchronising the low level gravel with any of the French deposits.

M. Le Hon's introductory words give a general view of the present state of the science, as well as of the problems the scientific man has to solve. We are sorry that he should have thought fit to introduce the question of the derivation of the human race from the apes so early in the work as the twenty-ninth page, but have no doubt that his analysis of the subject is as valuable as that of any other previous writer, which is by no means too extravagant an encomium. A history is given of the mode by which the flint implements which, since the time of Mr. Frere, of Hoxne, have attracted so much attention, have been made: and the conditions under which cavern deposits have been accumulated are carefully laid down. We would commend this part of the work to all those who, like M. Desnoyers, have any doubts about the authenticity of certain cavern remains. It is true that in the infancy of the science various caverns (as *e.g.* Kirkdale)

Faunas.	Ages.	Human Industry.	France.	Belgium.	Stratigraphy of the Belgian Caverns.
Existing species.	Age of Polished Stone.	Instruments of Polished Stone. Flint knives without sculptures. and worked bones. { with sculptures. worked bones.	{ "Aryan" skulls. Dolmens, etc. { La Madelaine. Les Eyzies— <i>Dolichocephalic skulls</i> . Laugerie basse. } { Laugerie haute. Solutré. Moustier. Gorge d'enfer. Anrignac, etc.— <i>Human remains, type undetermined</i> . High level gravels of Somme valley.	{ Entrenched camps. Sepulchral caverns, etc. { Furfooz—"Turanian" skulls, <i>Ligurian type</i> . Chaleux. } Marches-les Dames. { Pont-à-Lesse (upper bed). Pont-à-Lesse (lower bed). Montaigle. La Naulette, etc.— "Pithecoïd", jaw of exaggerated "Slavonian" type.	{ Beds which are forming at the present day. "Limon hesbayer" (Loess). Deposit with angular pebbles (diluv. rouge).
Emigrated species and Existing species.					
Extinct species.					
Emigrated species and Existing species.	Mammoth Age.—Reindeer Age.		Excavation of the valleys.		
		Worked flints, with small splinters on the two faces.			
		Worked bones.			Limons fluviatiles and rolled pebbles.
		Triangular flints worked on one face.			
		Haches worked on both faces.			
		Coarse pottery.			
		Worked bones.			

were imperfectly described. It is also true that since that time French geologists have thoroughly laid down the conditions under which the age of various deposits in caverns can be comprehensively synchronised and referred to various and definite ages, according to the relative percentage of extant, emigrated, or existing species they may contain. English palæontologists have fallen into the wake of the French, and have bit by bit accumulated such evidences of patient research as Mr. Pengelly, in his celebrated Kent's hole exploration (under the auspices of a committee of the Royal Society) has presented.

With regard to the Moulin-Quignon jaw, M. Le Hon prudently relegates it to an obscure note at the end of a chapter, and does not commit the error common to too many French palæontologists of playing off the Moulin-Quignon jaw as a trump card in the controversy on the antiquity of man. He does not exhibit similar prudence respecting the Neanderthal skull, of which we have here a long account.

The whole chapter on the Man of the Mammoth and *Ursus spelæus* period is most interesting. The skulls of Engis, Eguisheim, Olmo, and Neanderthal, and the jaw of La Naulette, are carefully described. As the Olmo skull is scarcely known amongst Englishmen, we translate M. Le Hon's description:—

"M. Cocchi, of Florence, considers this to be anteglacial and more ancient than the Abbeville jaw. It was discovered in a railway cutting at Olmo, not far from Arezzo. This skull was at a depth of fifteen metres in a bed of lacustrine marl, which presented no trace of disturbance. This clay, of a level higher than that of the Arno alluvium, ought to be very ancient. It is surmounted by a bed of sandy gravel (*ghiaie*), by ancient and modern alluvia, and by vegetable earth. Near the skull was found a kind of flint *hache* or lance-head, chipped with large facets. At two metres above there was collected the tip of an elephant's tusk. These human remains seem rather to complicate the great ethnological (*sic*) question than to throw light upon it. The form generally classes the skull amongst the dolichocephali; the broad, low, and angular forehead in nothing resembles that of any fossil crania discovered up to the present time. M. Vogt, who has examined the Olmo skull, says that he does not know anything similar in ancient craniology. The anterior part of the skull is much depressed, whilst the occipital portion offers a considerable development. On the whole, especially in the posterior portion, the Olmo skull appears to resemble more the Negro type than that of any other race."

The woodcut given, however, which exhibits a profile view of this skull, does not present any such remarkable peculiarities as those which M. Vogt seems to infer. It would, of course, be hazardous to infer from the profile view alone the considerable resemblance which this skull seems to bear to those, *e.g.* of the Borris and Blackwater river

beds, which exaggerate the extreme dolichocephalic type of the Dorsetshire long barrows and of the apostles' skulls of Switzerland. As, however, M. Vogt commits himself to the theory that the Olmo skull is *sui generis*, it would be unwise to contradict him on the mere ground of the resemblance the woodcut appears to bear to other and previously described dolichocephali. M. Le Hon argues in detail the question whether early man was cannibal. He quotes the discoveries of M. Spring in the cave of Chauveau, in Belgium, and M. H. De Ferry at Solutré, in the Maçonnais, which certainly bear out the theory. We are sorry to see, however, Mr. Laing's alleged discoveries in Caithness alluded to, and the scraps of mica-schist, which the ex-M.P. for Wick imagined to be works of human handiwork, described as "*silex*!" It is hardly necessary to say that no flint exists in Caithness.

The principal caverns of the age of the *Ursus spelæus* and of the Mammoth are the following :—Grotte de Vallières, De la Chaise, Grotte des Fées, Trou de la Fontaine, Sainte-Reine, Pontil, Moustier, Vergison, Massat, Kent's hole. A great deal of confusion has arisen by confounding these caves, which are of great antiquity, with the other ones of the reindeer age. These are also described by M. Le Hon in detail.

The account which is given by M. Le Hon of the caves of the reindeer period is especially valuable : and gives a far better account of them than in any book we have yet examined. Those described are Massat, Bise, Savigné, La Vache, Bruniquel, Des Eyzies, De la Balme, Bethenas, Chaleux, and Solutré, few of which have been described in English works on Archaic Anthropology. At the termination of this period took place that submergence of a large portion of northern Europe, during which the *Limon hesbayan* of Dumont was deposited. The waters in Belgium, according to M. Dupont's observation, attained the height at the epoch of the red drift (*argile jaune à blocaux*) of at least 250 metres.

We pass over a large portion of the work relating to the polished stone and bronze ages, inasmuch as our readers are already familiar with this period, which has been sufficiently described in English works. The analysis here given, however, is most valuable and comprehensive. At the conclusion of the work, however, is an epizoon, which rather detracts from its merits ; *i. e.*, an abridgment of the theory of Darwin, or "Transformism", translated from the Italian of Prof. Omboni, with prolegomena by M. Le Hon. This has absolutely nothing to do with the work itself ; and we regret that so much space has been wasted on discussing elementary Darwinism, of which we have had quite enough. Whether "Darwinism", or "Derivation"* be the real method by which the various living beings

* Owen, *Comparative Anatomy of Vertebrates*, 8vo., Lond. 1868, vol. iii.

on the globe have been created, matters at present very little; and has nothing to do with the question of "Fossil Man." If M. Le Hon had called his book one on the Origin of Man, the appendix would have been justifiable and necessary, but as it stands it is a blemish which we hope to see removed in the third edition. Belgium, however, in which country the most important evidences of the origin of man have been discovered, has just cause to be proud of the present work.

ANALYTICAL ACCOUNT OF THE CHIEF CHARACTERS TENDING TO SEPARATE MAN FROM ANIMALS.*

By M. ROCHET.

MAN cannot be defined, as many naturalists have attempted, by a sacramental phrase. His distinctive characters are multiple, and it is by their ensemble that we are enabled to understand him; he is a summary of all living beings, in some respects the conclusion; and his infancy has not yet terminated. From our point of view man may be considered under five principal heads:—

1. *Man examined externally as regards form.*—There is not a single feature in the human face which, examined from an artistic stand-point, does not constitute a character of beauty and nobility foreign to the animal. He alone has an expressive and intelligent physiognomy. This applies also to the body. Thus the trunk of man is both supple and flexible; it rotates on itself in a manner observed in no other animal; like the head the body is of incomparable beauty, and shows a harmony of proportion not observed elsewhere." The erect stature, the perfection of the hand, and of the foot, are characters of the same value. The hand is especially characteristic. Man alone has a true hand; he alone uses this admirable instrument for creating thousands of industrial and artistic masterpieces.

2. *The internal, sensitive, or moral man.*—Man is endowed with a moral sensibility altogether unknown to the rest of organised beings. Everything affects and agitates him. He loves, or believes in things animals have no notion of. He possesses the feeling of the beautiful, the ugly, of wrong and right. He alone is conscious of the morality or immorality of his acts. He alone in the whole universe is conscious

* Translated from the *Bulletins* of the Paris Anthropological Society. This is the summary of the author's important memoir on this subject.

of his existence, of that of the universe, of extension of space and duration. He knows that he is born, lives, grows old, and dies. Animals know nothing of all this. They feel that they will, but do not know it.

Man alone has an idea of God, and is attached to him by feeling and intelligence. By intelligence man arrives slowly at the idea of God. This one of those sublime abstractions which form the glory of human conceptions.

Considered in his social relations, even the most primitive and necessary, man alone of all animated beings forms a complete family, proceeding from the ascendant to descendants and collaterals. The animal takes life as it finds it without any way modifying it. Man, on the contrary, takes life according to his will ; for all the regions on the globe form part of his domain ; and he can in a thousand ways vary the mode of his existence.

3rd. *Man considered as an active being.*—Even in satisfying the lowest appetites, man differs from animals. He alone prepares his food by cooking it. Man alone provides himself with clothes to protect himself from the elements. When we treat of industry, instruments, and arms, the difference is enormous. The animal has no other weapons than those given to it by nature ; man furnishes himself with a rich arsenal, and this aptitude he possessed when he first appeared upon the earth, as taught us by Archæology. Man finally possesses another important character, articulate speech. Where there is no word there is no idea, no thought, no intelligence. The extensive language of animals consists of simple interjections.

4th. *Of Man considered as an intelligent being, or of the faculties of the human mind.*—Animals possess in principle the same intellectual elements as man, but in a rudimentary state, so rudimentary that all comparison is impossible. Like ourselves, animals possess memory, or rather a memory, a faculty which is the basis of every intellectual operation. But in them it is a faculty founded only on wants, personal utility, without any true notion of the objects ; whilst in man who, by means of language, acquires ideas, the facts of memory acquire great value. I have no intention of defining memory, but I estimate that a human brain may well contain from 300,000 to 400,000 images of things. Thus the memory of a philologist may contain more than 100,000 words without counting the variations, flexions, etc. The animal possesses nothing analogous to the free will of man. The choice of an animal is not a real deliberate choice ; it is a simple option comparable to the decisions of a very young child or of an idiot.

The animal entirely wants imagination. I take this word in its poetical sense. It does not possess this faculty so precious for man's

happiness, the charm of life, the consolation and the remedy for his evils.

5th. *Man considered as a collective being.*—I merely here indicate how much man is superior to the animal by the mode in which he occupies the soil. The animal constantly loses territory which man gains. The day will arrive when there will be on the surface of the earth only such animals as are useful to man. The chief reason of man's great superiority over the animal is his faculty of association. Animality has no principle of cohesion in its members. Every animal lives only for itself. But men group together and combine their forces, and, although individually weak, they acquire an immense power. Man transmits his works and his conquests to his descendants. The animal perishes and leaves only his skeleton behind. And if man has frequently deified himself on the earth, it is because he found nothing on earth that can be compared to him.

BURTON'S EXPLORATIONS IN THE BRAZIL.*

THOSE anthropologists who, in the summer of 1865, watched the departure of Capt. Burton for a new and, to him, hitherto untrodden path of scientific travel, have waited long for the publication of the great work which should comprise his "experiences" of South American anthropology. The practical knowledge of man, alike in his highest and in his lowest aspects, which he had previously gained in India, in Arabia, in the Rocky Mountains, in Eastern Equatorial Africa, at Fernando Po, and in Dahome, naturally in a great degree qualified him for South American research. Now, however, we have the satisfaction of knowing that he has been promoted to a new field of labour in Syria; we doubt not that he will find that Abana and Pharphar, rivers of Damascus, are as much productive of anthropological fruit as even the São Francisco.

Glancing over the two enormous and closely printed volumes before us, we are utterly at a loss how to commence our criticism. Nearly every part of the work is a minute photograph of the country, the people, and the productions of the Brazil. A careful study of the

* *Explorations of the Highlands of the Brazil, with a full account of the Gold and Diamond Mines; also, Canoeing down 1,500 miles of the great river São Francisco, from Sabará to the sea.* By Captain Richard F. Burton, F.R.G.S., etc., Ex-President Anthropol. Soc. London, 2 vols. Tinsley Brothers.

authorities cited by him (made, we may parenthetically say, before Captain Burton's visit to the Brazil, and without any reference to the present work) has led us to the deliberate and mature generalisation that the present is one of the most important works on the Brazil ever published, and worthy to rank with Spix, Castelnau, or Neuwied. We shall commence with a few remarks on the subjective nature of descriptive anthropology.

Those who have themselves been in the tropics, and have watched the various modes in which the intrudent or colonising European population have assimilated with the physical features of the country, are able to appreciate the truth of the following remarks :—

“The first impression made by our Transatlantic cousins, speaking only of the farmer and little educated class, is peculiar and unpleasant. In them the bristly individuality of the Briton appears to have grown rank. Their ideas of persons and things are rigid, as if cast in iron : they are untaught, but ready to teach everything. Each one thinks purely and solely of self, from the smallest acts and offices of life, such as entering a room or sitting down at meals, to the important matter of buying land or of finding a home. All have eyes steadily fixed upon the main chance ; every dodge to get on is allowable provided that it succeeds, and there is no tie except of blood, to prevent at any moment the party falling to pieces. Amongst themselves there is no geniality ; of strangers, they are suspicious in the extreme, and they defraud themselves rather than run the risk of being defrauded. Nothing appears to satisfy them ; whatever is done for them might have been done a ‘heap deal better.’ As the phrase is, they expect roast pig to be run before them, and even then they would grumble because the crittur was not properly fixed for them. This is not an agreeable account of the pioneers now leading the great Anglo-American movement in the Brazil. Yet we presently find out that these are the men wanted by the empire to teach practical mechanical knowledge, to create communications, and to leaven her population with rugged northern energy. Bred in a subtropical country, seasoned to fevers, and accustomed to employ Negroes, they will find the Mediterranean Brazil an improved edition of their old homes. Nothing is to be said against the German in this country, except that he is too fond of farming, as he often did in the United States, an *imperium in imperio* ; moreover, his political ideas are apt to be in extremes. The Frenchman, like the Portuguese, comes out empty, as the old saying is, and goes back full. The Englishman, except under Morro Velho discipline, languishes and drinks. As regards bodily labour, he is inferior to the Negro. The Scotchman prefers great cities. The Irishman has been hitherto found unmanageable, but under the Anglo-American, who knows so well how to drive and manage him, he will be a valuable hand, the muscle and the working power of the country.”

There are more truths in this passage than the Saxon Englishman

will care to admit ; as a whole, it must be admitted that Anglo-Saxon emigration to, and acclimatisation in, the tropics is a failure. It was well suggested by Dr. Hunt that the men who are sent to the tropics should be selected in temperament, and that those should be preferred who appear to have temperaments most suited to the climate. This is so far so good. But we think that Dr. Hunt himself would not object to a further and more minute racial selection. We think ourselves that the Celt is the race *par excellence* for the tropics. The Saxon Englishman is too apt to suffer from nostalgia. "Vaterland," the "cottage homes of England," depraved, wretched, and degraded though they may be, have unspeakable charms for the Saxon. In the tropics, with their glorious soul-revivifying noonday sun, their calm and placid evening twilight, and their sharp "four o'clock in the morning" sensation of a delightful cool breeze, the Saxon finds no sources of enjoyment. The charms of scenery and climate, the new sensations of association with semi-savage life, and with a newly-spoken language, afford to him neither amusement nor consolation. He misses mutton, Protestantism, and beer ; the *tortillas*, *carné seco*, and *aguardiente* of the natives are at first repugnant to him, yet little by little he falls under the influence of the last named fluid, and the observant anthropologist sees the "unready Saxon" a moping, lazy, dissatisfied drunkard. Happily for his neighbour, there is a remedy, and the proximate epidemic speedily removes the lazy lout who has been imported into a land which is to him the reverse of Paradise.

It is far different with the Irishman or Frenchman. They have no social prejudices against associating with the Spaniard, and rapidly assimilate their diet with that of the native. So long as the Celt has work wherewith to feed his mind, the natural elasticity of his spirits precludes him from despair, and his inborn sense of honour, discipline, and veracity will render him susceptible of sensations which go far to make the apparently monotonous life in the tropics bearable. The writer (no phrenologist in the vulgar sense of the word) cannot but contrast the brains of the Celt and the Teuton. The enormous perceptive faculties of the first, coupled with his large basilar development, prefigure his power to observe and to enjoy surrounding nature, and to maintain vital force. The second has height and breadth, volume of voice, and rapidness of deduction ; as an inductive observer, the Teuton is simply nowhere, and in the Brazil he finds his level. It is so wherever we witness him. The flaxen-haired, fat, jolly, "sonsy" Anglo-Saxon, when contrasted with the wiry, intellectual, revengeful Celt, sinks into immeasurable inferiority. He tries to impress the natives with an idea that he is an Englishman, pays poor rates, and eats meat three times a-day ; he challenges them or his

Celtic superiors to pugilistic encounters ; and it is a relief to suffering humanity when a *cuchillada* ends the contest.

But to revert to the Brazil. It being admitted, not merely upon the showing of Capt. Burton, but upon the testimony of long experience, that the native of Southern Europe sympathises with, and assimilates to the native of America more than does the native of the later and lesser civilised nations of the north, let us examine what are the physical changes which his organisation undergoes. When a healthy European is for some time a resident in the Brazil, what differences are perceptible between himself and descendants on the one hand, and on the other hand the issue of the same parents in localities closely adjacent to their own ethnic centre ? The passages in the present work bearing reference to this question are numerous. We can only here select one of the more striking passages, referring, not merely to the mixed breeds but also to the Creole descendants of European parents. Apparently, according to Capt. Burton's theory, a greater deviation from the European type exists than is the case in Central America. For this we were prepared, remembering that in Central America the Negro blood forms a very small proportion of the mixed race, which is there almost entirely (except on the Mosquito coast) composed of white and aboriginal elements. In fact, the Brazilians are piebald, whereas the Central Americans are merely skewbald.

"The skull is generally dolichocephalic, and it is rather coronal than basilar ; rarely we find it massive at the base or in the region of the cerebellum [a great contrast to the Indians of the Western Coast] the sides are somewhat flat, and the constructive head is rare as a talent for architecture or mechanics. The cranium is rather the 'cocoa-nut head' than the bull head or the bullet head. The colour of the hair is of all shades between chestnut and blueblack ; red is rare ; when blonde and wavy, or crisp and frizzly, it usually shows mixture of blood ; it seldom falls off, nor does it turn grey till late in life—also a peculiarity of the aborigines. With us the nervous temperament is mostly known by their silky hair ; here we have the former accompanied by a 'mop.' I have heard Englishmen in Brazil declare that their hair has grown thicker than it was at home ; so Turks in Abyssinia have complained to me that their children, though born of European mothers, showed incipient signs of wool—they invariably attributed it to the dryness of the climate. Though hair in the Brazil is, indeed, an ornament to women, it seldom grows to a length proportionate with its thickness. The deepest eyes are straight and well-opened ; when not horizontally placed there is a suspicion of Indian blood ; the iris is a dark brown or black, and the cornea is a clear blue white—not dirty brown, as in the Negro. The eyebrows are seldom much arched, and sometimes they seem to be arched downwards ; the upper orbital region projects well forward. The

mouth is somewhat in the 'circumflex-accent shape;' and the thin ascetic lips are drawn down at the corners, as in the New England and the asthmatic sufferers in England. The teeth, of dead white, are unusually liable to decay; they require particular attention, and thus the dentist is an important person. Young men of twenty-five sometimes lose their upper incisors, a curious contrast of old mouth and young hair. The expression of the Mineiro's countenance is more serious than that of the European. In his gait, the slouch of the boor is exchanged for the light springing step of the Tupy. Hence he is an ardent sportsman, and the country squire delights in hunting parties, which extend from a week to two months. The nomad instinct is still strong within him, and he is always ready to travel; curiously enough, foreigners blame this propensity, and quote the old proverb about the rolling stone. All are riders from their childhood, and, like the northern backwoodsmen, they prefer the outstretched leg with only the toetip in the stirrup; this, they say, saves fatigue on a long journey; moreover, as they sit by balance, they can easily leave the animal when it falls. Our hunting seat and the hitched-up extremities of the Mongol would be to them equally unendurable.* It is to be observed that all the purely equestrian races ride either as if squatting or standing up; and both equally abhor what we call the *juste milieu*. Like the Bedouin and the Aborigine of the Brazil, the Mineiro is able to work hard upon a spare diet, but he will make up manfully for an enforced fast. Self-reliant and confident, he plunges into the forest, and disdains to live with others, and to cling in lines to the river bank."

Such is the Brazilian, *fide* Burton; and a description like the above will, we think, rarely be matched in the whole range of our literature of descriptive anthropology.

If we turn to the records of the past, what evidence is given us of prehistoric, or even of ancient existence in the Brazil? The appendix to the present work gives us a series of interesting facts, extracted from the *Revista Trimensal* of the *Instituto Historico e Geographico Brasileiro*, and which contain an account of a large, hidden, and very ancient city, without inhabitants, discovered in the year 1753. For interest we may say that this recital surpasses Stephens, and rivals Squier. For it gives us the account, for the first time in anthropological literature, of a mighty buried city in the mountain fastnesses of the Brazil, as well as five separate inscriptions which have been deciphered from these monuments. We are not ourselves about to offer any interpretations of these inscriptions. There has been quite enough nonsense printed during the last few years on the "Palæo-

* *Note by Reviewer.* What a contrast, however, is afforded between the short stirrups of the Central American *Mozo*, doubtless inherited from his Mauro-Spanish civilisers, and the long stirrups of the Texans and Californians, the descendants of the *rejetamenta* of Europe, who were never equestrians. The typical English jockey, or huntsman, however he may be *in medias res*, is far from being a model. The "cavalry seat" is, of course, wholly unsuitable to the practical man.

graphy of the New World" for us to wish to add one single shovelful of dirt more to the heap which has been already accumulated. Besides, "Maya alphabets" have had their day. But we may as well hint that the letters of the first inscription $\kappa\nu\phi\epsilon\xi$, have an unpleasantly Greek appearance, although they are to us unintelligible; whilst the Greek cross for three, the Latin cross for five, and the Arabic 5 for seven, make us a little suspicious that the inscription contains the scratchings of some joker. We have seen such things done before now. The little bit of Chinese, or Maya, or gibberish which is put in to represent the figure 8, does not shake our opinion. Nevertheless, we cannot but admit that the article in question may throw important light on the history of the early inhabitants of the Brazil, and we think that Mrs. Burton's plea for indulgence in favour of her excellent translation of the memoir may be frankly admitted. Few Englishwomen would have so easily mastered the difficulties of the language.

The passages in the present work relating to the gold mines of the Brazil are very important, especially in an anthropological sense, as it shows to what success British emigration to that country may be successful when the miners are under proper discipline, and when a large proportion of the men are permitted to have their wives with them. We are certain that the true civilisation of the tropics will be effected only when a certain proportion of European women are imported, to form the nucleus of a future white population. This pure white population—"Creole" in the literal sense of the word,—will extirpate the atrocious "mixed breed" that now crawls, like a disgusting reptile, over the fair face of the Brazil. Whether the best element to form the Creole population is Teuton or Romano-Celt, we have hinted above. In "rugged northern energy" we have no confidence whatever. Even the Teuton, however, is mentally and morally the vast superior over the cowardly, thievish "Ladino;" and when we glance at the miserable fate of our houseless, homeless poor in England, we cannot but hope that they may be induced to settle in a land where starvation, at least, is impossible. The formation of mixed breeds, however, is a direct social vice. Apart from all laws of morality with which we, *quâ* anthropologists, can have no immediate concern, we consider that any white man who aids in the production of a "mixed breed," should pay a fine of (say) twenty-five dollars to the civil authorities for deteriorating the population of the country. This may, at first sight, be thought severe; but white men should learn to restrain their passions, and refrain from producing a race prejudicial to the wellbeing of the state. The use of inoculation, and the spread of the rinderpest, have been checked by European law, without any regard to the feelings of the parent or

of the cattle-owner ; and there is no reason in ethics or in law why the mixed breed should not be "stamped out."

The weight of the pure blood Brazilian is estimated as about 128 lbs. ; and, according to Capt. Burton, he is rather wiry and agile than strong and sturdy. Hence, the Brazilian calls himself "Pé de Cabra," or goat-foot, opposed to the Portuguese, who is "Pé de Chumbo," foot of lead. We must commend the whole chapter on the Physical Man of Brazil to our readers, as it gives a far clearer notion of the population than any other work we remember. Capt. Burton certainly has a power of throwing himself into his subject, which no other modern traveller seems to possess. He has the vividness of Russell, without his occasional dulness ; the minute description of G. A. Sala, without his vulgarity ; and the accuracy of a photograph, without its deviation from focus. For to him anthropology is the focus around which all other sciences sink into distant perspective ; and if (to pursue the metaphor) he focusses too vividly now and then, so as to show the dirt-spots and the patches on the dress of his object, we have, after all, but an exact picture.

The dedication of the work is to Lord Stanley ; and we are glad to see that Capt. Burton signs himself "Ex-President of the Anthropological Society of London,"—a title which, in itself, is far more high than most of those commonly adopted in dedications. Mrs. Burton's preface is itself a model of good common sense ; and we are very glad to see that she appeals to the *gentle* sex not unduly to misjudge the present work, on account of the import of certain expressions used by the author, and which, perhaps, offend against the prejudices of the ignorant English public. Our own views with regard to the "religious and moral sentiments, which belie the good and chivalrous life" of Captain Burton, closely agree with those of the fair author of the preface, who has guided the delighted reader very well through the "anthropological sandbanks and hidden rocks" she appears to have noted, during her sojourn in the Brazil with her illustrious husband.

CARL VOGT'S LECTURES ON MAN.*

PROFESSOR CARL VOGT is styled by his countrymen the Darwin of Germany. Whatever resemblances there may be between these distinguished men of science, there is one important distinction to be borne in mind: Mr. Darwin has not in his great work on the Origin of Species directly applied to *Man* his theory of natural selection. That Darwin has not done so is dwelt upon by many as evidence that the illustrious naturalist never intended to imply man's origin by transmutation from some other animal, and his followers are censured for making him answerable for such a conclusion. (*Vide* Speech of Dr. Duncan on Mr. Dendy's Paper, Nov. 3, 1868, in J. A. S. L.) But as Mr. Darwin has not made man an exception to his theory of origin of species in general, it is utterly impossible to deny that the transmutation doctrine must involve man; *e.g.*, in the sweeping admission that *all* existing animals have descended from, at most, only four or five progenitors; and that analogy would even lead to the inference that "all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was at first breathed." Vogt, on the contrary, deals directly with man's origin, and, applying the hypothesis of Darwin, pushes it to its utmost limits. Those who still think that Darwinism permits man's genesis to be an exception from that of other species should read Professor Vogt's Lectures. That is not a difficult task to the student of scientific truth, whatever it might prove to the old-fashioned opponent of development. Thanks to the English Editor, this work may now become as popular in Britain as it is in Germany; a more charming work of science, and one better deserving of popularity, it would be difficult to find. It exemplifies the profundity and thoroughness which are characteristics of the German mind, with a lucidity of style which is not always a characteristic of German literature.

It would be obviously impossible in the limits of a brief notice, like the present, to go over the immense field of thought traversed by our author in sixteen lectures, comprising a volume of 469 pages, profusely illustrated with excellent woodcuts. Having to choose amid such an *embarras des richesses*, I shall confine myself to that portion of the

* *Lectures on Man, his place in Creation and in the History of the Earth*, by Dr. Carl Vogt, Hon. Fellow of the Anthropological Societies of Paris and London; Edited by James Hunt, Ph.D., F.S.A., F.R.S.L., &c. London, Longman & Co.; pp. 475, with 125 woodcuts; price 16s.

work bearing immediately on the profound and interesting question—the ancestry of the human species. If the genus *Homo* wishes for information on this point, Professor Vogt is quite ready to impart it in his Preface. Dr. Hunt observes: “Professor Vogt acknowledges that, to a great extent, he is willing to accept the conclusions of England’s great modern naturalist Charles Darwin; but, unlike many of that profound observer’s followers in this country, he entirely repudiates the opinions respecting man’s unity of origin, which a section of Darwinites in this country are now endeavouring to promulgate. “In this I concur. It appears to me quite consistent with Darwinism to believe in unity or plurality of human origin. The Darwinist may be monogenist or polygenist. I have expressed these views in a paper written before I had made acquaintance with Professor Vogt’s work.”*

In lecture six we have an elaborate comparison of man with the ape. Our author shows the fallacy of the popular idea that man is the only defenceless animal. The chimpanzee is equally unarmed; yet the chimpanzee has not become one of the lords of creation. The sheep butts with its hard skull; so does the Negro.

The advocates of generic distinction between human and simian brains point out that in man the convolutions are rounder, more complicated, more numerous, and less symmetrical. All very true, says our author, but these are only relative and quantitative, not qualitative differences. The general plan is and remains the same; this is proved by drawings of human and simian brains. Let the reader compare the drawings of the brains of the Hottentot Venus, Gauss, the celebrated mathematician, and the orang, pp. 184, 185. There is a greater similitude in the Hottentots and simian brains than in the two human brains. This appears fatal to the theory of a separate order and kingdom for man, based on a supposed fundamental diversity in brain structure between the genera *Homo* and *Simia*. In both the generic division of frontal, parietal, posterior, temporal lobes, Sylvian and other fissures correspond. We must agree, with Gratiolet, that “there is in man and ape a peculiar cerebral form; also in all these creatures a general type in the arrangement of the cerebral convolutions. This resemblance of man and ape in arrangement of the convolutions is worthy the attention of the philosopher. There is equally a particular type of the cerebral convolutions in bears, cats, dogs, makis, in short, in all natural families. Each of these families has its normal type; and in each of these groups the species may be connected solely according to the character of the cerebral convolutions.”

Our author proves that: “The difference between the brains of the

* See Paper on “The Ape-Origin of Mankind,” *Pop. Mag. Anthropology*, October, 1866.

microcephalus, an abnormally formed man, and that of the lowest race, the brain of a Bushman's wife (which, according to Gratiolet, would have produced idiotcy in a white man), is greater than the difference between the idiot's and ape's brain. The idiot who has remained stationary in a primary stage, stands nearer to the ape than to his progenitor; the distance which his brain has to pass to perfect human development is greater than the distance it has passed from the simian stage" (p. 170). Professor Vogt "does not hesitate to uphold against Bischoff and Wagner, and even against Johannes Müller, that microcephali and born idiots present as perfect a series from man to ape as may be wished for;" and gives us further interesting details from a comparison of twenty cases of congenital idiotcy:

"This is an arrested brain growth, chiefly affecting the anterior portion. Development is slow, such individuals learning to walk only in the fifth or sixth year. These idiots are frequently, though not always, dwarfs, like the Aztecs. The stooping walk, with curved knees, resembles that of the ape, causing them to appear shorter than they are. They usually die early. The impression produced by them is decidedly simious, or that the authorities even describe it as such. The arms seem disproportionately long, the legs short and weak; the head is that of an ape, the skull-cap is covered with thick woolly hair; the forehead nearly absent; the eyes stare from projecting orbital margins; nostrils wide; lower portion of the face muzzle-shaped; the teeth obliquely set. The head is disproportionately small in comparison with the body, viewed in profile the face occupies as large a space as the cranium. The large osseous pad above the root of nose, the projecting jaws, the facial angle of about 53-56 deg.; all these characters are decidedly simious. Viewed from below, the large occipital foramen situated farther back, the long parabolic palate, the open basilar suture, as well as traces of the intermaxillary suture, all these strike us as animal characters. We need only place skulls of Negro, chimpanzee, and idiots, side by side to show that the idiot holds, in every respect, an intermediate place between them.

He summarises idiotic forms thus: "In their brains and skulls resemblance to the human standard has been diminished by arrested development of anterior cerebral lobes, and only the secondary human character preserved, in the serrated set of teeth and projecting chin." He asserts that "If a microcephalic skull were found without a lower jaw and an upper row of teeth, *every naturalist would at once declare it to be the cranium of an ape*, as in such a mutilated skull there would not be found the least characteristic mark which would justify an opposite inference." This, perhaps, is going too far; certainly the assertion does not appear to me to be borne out by the drawings of the idiot and chimpanzee skulls.

He then glances at the vital phenomena of idiots: "There are

scarcely any sexual manifestations ; movements rapid but unsteady ; walk tripping. Many never learn properly to use their hands ; they exhibit a restless activity ; attention excited and as quickly obliterated ; memory defective ; they are fond of play, but cannot learn the amusements of children ; they are tolerated like domestic animals, manifesting their wants by shrill sounds, understood as the hunter distinguishes the cries of animals, &c. Few acquire articulate language : the Aztecs pronounced some few words they had learned." Leubuscher says of the Aztecs : " They possess memory for such things as greatly excited their attention, for persons who had been long about them. When I measured them the boy recollected earlier proceedings of this kind. After the lapse of eight days he well recollected the previous process, so that on my questioning him what I had done, he described the lines round his head ; but, having interrupted my visits for several days, he had forgotten me and all the rest, as had also the girl. The extent of their intellectual capacity does not surpass that of an eighteen months' child, and, may be, falls below it. What we call ideas they probably do not possess, as this degree of intellectual development can only be formed upon the basis of individual self-consciousness." Vogt speaks of the so-called Aztecs as mulatto dwarfs ; it is curious to compare with the opinions of scientific men the newspaper puffs and flourishing articles about the time of the first exhibition of the Aztecs in London, and their recent receptions after marriage in 1867. As I am not like a friend, who said he never had occasion to change his views, and knew all that was necessary to be known at the age of eighteen, I am not ashamed to confess that I published an article on the Aztecs in the *Freemasons' Magazine*, June, 1855, under the impression that they were types of a distinct race. I have made some advances in the study of Anthropology since that time.

Vogt thinks, with Wagner, that a minute analysis of psychical phenomena in idiots might yield important results as regards intellectual activity in general ; and that some idiots might, by careful training, be raised in the intellectual scale.* From known facts intellectual capacity is closely connected with cranial and cerebral structure, and never admitted a well-articulated language. There is no trace in history of such decided human characters as ideas, a higher intelligence and abstraction, not even of such primitive notions of good and evil, nor of original moral qualities, as induce some modern French authorities to claim for man a separate kingdom. In many respects idiots stand below the animal ; they are more helpless, are unable to procure food for themselves, and to preserve life without assistance. Their whole

* A very interesting account of such phenomena is given by Miss Martineau. *Letters on Man's Nature and Development*, by Atkinson and Martineau.

appearance is simious: the deficient forehead, protruding, glassy, rolling eyes, projecting muzzle, stooping posture, long arms and short legs, minute analogies in cranial and cerebral structure, restlessness, spasmodic twitches, shrill notes of pleasure or anger—who does not here detect the ape? He concludes his picture of ape man as follows: “There is undoubtedly a mixture of human and simious character, the latter being produced by an arrested development of the fœtus *in utero*, forming thus an intermediate stage between ape and man, produced by the progress of the laws of the development of human genus. If now it be possible that man, by arrest of development, may approximate the ape, the formative law must be the same for both; and so we cannot deny the possibility that just as man may, by arrest of development, sink down to the ape, so may the ape, by a progressive development, approximate to man.”

The intelligent student of Vogt will be struck with the remarkable approximation to the human type in the skulls of some American monkeys; *e. g.*, those of the brown sajou (*Cebus apella*), and the capuchin (*Cebus albifrons*). Illustrations are given of the top view, profile, and base of skull (Lecture 8). After these, let him look at drawings of monkey brains (pp. 212, 213), and following Vogt's advice, “compare with these the brains of the Hottentot Venus and the German Gauss. We may leave the inference to common sense.” He concludes, “the unprejudiced observer cannot fail to find that the sum of the difference between two species of apes is in no case greater, and in many cases much less, than those obtaining between two races of mankind, and he will arrive at the conclusion, that the races of mankind must either be considered as different species, or the species of apes must be designated races. But what is to become of systematic zoology, if long and short-tailed species of apes, differing so much in external form that they have been divided into genera, are to constitute only varieties or races? All systematic natural history would go to ruin; and all *Simiada*, from the lowest ouistiti up to the gorilla, would be fused into one whirlpool, which would swallow up man and all his races” (p. 214). “No man would certainly have doubted the specific difference in mankind, if the unity of the human race had not to be defended at any price,—if a tradition had not to be supported in opposition to the plainest facts,—a tradition which has been the more venerated because it runs counter to positive science. As regards species, then, we hold fast by the principle that the genus *Homo* consists of several species, which deviate from each other as much as, if not more so, than most *Simiada*; if the principles of systematic zoology are to be of any value, they must be as applicable to the human as to the simious species” (p. 222).

I conclude by presenting Vogt's ante-monogenistic views of ape-origins of man. "Whilst we assume the actual descent of the human race from apes, and believe the differences between both, which will become greater by further development of man, result from selection and intermixture, we decidedly repudiate an inference we are charged with, that we must necessarily come back to the original unity of mankind, and consider Adam as an intermediate form between ape and man, etc. Never was there a more incorrect inference; as far as I know, no Darwinist has either raised that question, or drawn the above inferences, for the simple reason that it neither accords with the facts, nor their consequences.* *The ape-type does not culminate in one, but in three anthropoid apes*, which belong to at least different genera. Two of these, orang and gorilla, must be divided into different species; there are, perhaps, some varieties of them which form dispersive circles, like some around certain races of man. This much is certain; each of these anthropoid apes has its peculiar characters by which it approaches man: the chimpanzee, by cranial and dental structure; the orang, by its cerebral structure; the gorilla, by structure of the extremities. None of these stands next to man in all points,—the three forms approach man from different sides without reaching him," etc. (p. 464). "Let us imagine the three anthropoid apes continued to the human type,—which they do not reach, and, perhaps, never will reach; we shall then see developed from the three parallel series of apes, three different primary races of mankind, two dolichocephalic races descended from gorilla and chimpanzee, and one brachycephalic, descended from orang: that descended from gorilla is, perhaps, distinguished by development of teeth and chest; that descended from orang, by length of arms and light red hair; and that issued from chimpanzee, by black colour, slender bones, and less massive jaws."

The chimpanzee has a white, or rather a yellow face. M. du Chaillu tells us, the Negroes "have a notion that there is some mysterious connexion or affinity between the chimpanzee and the white man." He thinks it is owing to the pale face of the chimpanzee, which has suggested the notion that we are descended from it, as the Negro has descended from the black-faced gorilla.** Vogt continues: "When, therefore, we look upon apes and their developments as proceeding from different parallel series, the assumption of only one intermediate form between man and ape is unjustifiable, inasmuch as we know in

* The Editor of Vogt's Lectures adds in a note: "This is quite true, although the author is mistaken respecting there being no Darwinist advocates for unity. I have alluded to this in the Preface."—Ed.

† *Journey to Ashango Land*, p. 35.

our present creation three different sources for such intermediate forms. Schröder Van der Kolk and Vrolik agree with us in this respect, although they are opposed to Darwin's theory. 'We know,' say they, 'no species of apes which forms a direct transition to man. If man is to be derived from the ape, we must search for his head amongst the small monkeys which group themselves round the Cebus and Ouistitis; for his hand, we must go to the chimpanzee; for his skeleton, to the siamang; for his brain, to the orang [and, I add, for his foot, to the gorilla]. Putting aside difference in teeth, it is manifest that the general aspect of the skull of a Cebus or a Ouistiti, or some other cognate monkeys, resembles, though in miniature, more the skull of man, than the skull of an adult gorilla, chimpanzee, or orang.' " Vogt adds: "It would thus be requisite to collect the human characters from five different apes; from one of America, from two of Africa, from one of Borneo, and from one of Sumatra; the primitive relations of man are accordingly so scattered, that we can hardly believe in one common stock. It is just this plurality of characters which confirms us in our view. If macaci in the Senegal, baboons in the Gambia, and gibbons in Borneo, could have become developed into anthropoid apes, we cannot see why American apes should not be capable of a similar development. If in different regions of the globe, anthropoid apes may issue from different stocks, we cannot see why these different stocks should be denied further development into the human type, and that only one stock should possess this privilege; in short, we cannot see why American races of men may not be derived from American apes, Negroes from African apes, or Negritos, perhaps, from Asiatic apes!"

After all, why not go still further, and look to another species altogether for man's parentage, in those countries where neither apes nor monkeys are found. The Australian native points to the kangaroo as his "old man." Why not? a very respectable progenitor! Some men appear to be still in the reptilian phase, of three chambered heart, sluggish blood, and their manner of crawling through life.

Vogt arrives at similar results in examining mankind and their history, tracing the plurality of species, not merely in historic, but in pre-historic times. "If this plurality of races be a fact,—if this constancy of character be another proof for the great antiquity of the various types, for their occurrence in diluvium, or even in older strata,—then all these facts do not lead to one common fundamental stock, to one intermediate form between man and ape, but to many parallel series, which, more or less locally confined, might have been developed from various parallel series of apes. If apes became de-

veloped into men, they had, in the Old World, a range from the equator up to England, and could thus form the autochthonic races upon the various spots where we have found the oldest species of mankind. This assumption equally leads to an original plurality of mankind, not to their derivation from a single stock, but from the various twigs of that tree, so rich in branches, which we surround with the Order of primates or apes. The simian type parts in various directions. It first divides into two chief branches,—monkeys of Old, and monkeys of New World; each of these main branches produces twigs, which seem more and more to part from each. But on arriving at perfection, the ends of the twigs turn again towards each other; so that from fundamentally distinct families of gibbons, macaci, and baboons are developed the three anthropoid apes, which, by a number of common characters, stand considerably nearer each other than the groups of which they are the heads."

"Does not the history of man present something similar? The farther back we go in history the greater is the contrast between individual types—the most decided long-heads immediately by the side of the most decided shorthead. Our savage ancestors stand opposed to each other—stock against stock, race against race, species against species. By the constant working of his brain, man gradually emerges from his primitive barbarism; he begins to recognise his relations to other stocks, races, and species, with whom he finally intermixes and interbreeds. Innumerable mongrel races gradually fill up the spaces between originally so distinct types, and, notwithstanding the constancy of characters in spite of the tenacity with which primitive races resist alteration, they are by fusion slowly led towards unity.' (P. 468.)

Lest I be accused of undue partiality towards this able writer, I must concur with the regret expressed by Dr. Hunt in his Preface, that Professor Vogt should have displayed so decided an *animus* against theologians. I regret this for two reasons—first, that this display of animus is in itself unworthy of a man of science; secondly, that it is especially to be avoided, as calculated to make truth unpopular.

J. MACGREGOR ALLAN.

MR. BRAY ON THE SCIENCE OF MAN.*

MR. CHARLES BRAY has had the kindness to publish a pamphlet informing the Anthropologists of Europe of the way in which they ought in future to conduct their researches. The pamphlet is amusing if it is not very instructive. Mr. Bray's Preface runs as follows:—

“The object of Anthropological Science must be to improve the race of men, and to make Newtons and Shakespears to order. Our life and soul are part of the forces and powers of nature—of the spirit ocean that surrounds us. They are entirely supplied from the great fountain which works only in accordance with fixed law, and the conditions of their existence we can therefore discover and control. If the world's thanks are universally acknowledged to be due to the late Jonas Webb for improving the breed of short horns, and for teaching us how ‘to grow more mutton and wool to the acre,’ surely we shall owe more to the man who will teach us how to improve the breed of men, and to grow more ‘brains to the acre.’ Our Anthropological Societies, both of London and Paris, are occupied too exclusively with the past; with man's antiquity; with his origin, whether born or created; with race distinctions, being most assiduous in collecting skulls, and talking most learnedly of dolichocephalic and brachycephalic heads (long and short heads), without apparently a suspicion at present that brains are of any use. As the President of the London Society truly tells us, the attention of the Society has, during the four years of its existence, been ‘mostly directed to the physical characteristics of man;’ and he says, ‘I am not aware that a single fact of cerebral physiology has been brought under our consideration for investigation.’ The object of the present writer is to enter, doubtless, ‘the ignorant and egoistical’ but humble protest of an outsider against this mode of proceeding; and to point to the spacious and fertile fields that invite attention. Between the aspirations of the young lady who tremblingly asks, ‘why the nose is placed on the front of the face, pointing towards the infinite, if it is not to give, as it were, a foreshell of the illimitable,’ and the proceedings of the Anthropological Society, there is no doubt a wide range, but either extreme is probably equally useful. As there is so much to do, perhaps it would be better to take man as we now find him, than to begin at the very beginning, where the record may be considered by some a little obscure. Of course, it is fully admitted that all honest investigation, in every field of research, is of importance; it is simply a question of relative importance.”

Mr. Bray, we must admit, is a bold man; he is the first writer we know of who has openly proclaimed that the end and aim of the An-

* *The Science of Man: a bird's-eye view of the wide and fertile field of Anthropology.* By Charles Bray, author of *Force, and its Mental Correlates*. Longmans, 1868. Price 1s.

thropological Science must be to improve the breed of mankind. Mr. Bray deserves encouragement. The time may yet be far off when the Science of Anthropology will be ripe to lay down fixed laws for the improvement of the human species. We have yet to have in Europe our Anthropological gardens side by side with those of Zoology and Botany; this is the first step towards founding a real Science of Man. In this way alone can we ever discover the way to make our Newtons and Shakespeares to order.

The first part of Mr. Bray's pamphlet is occupied mostly with what reads like a complaint against modern Anthropologists. Mr. Bray says:—

"Anthropology 'proposes to study man in all his leading aspects, physical, mental, and historical;' and if it really is 'the Science of Man,' it must occupy itself principally with the present laws and conditions of his being. His past history—with which Anthropological Societies have hitherto too exclusively occupied themselves—as to whether he was created or born, or as to his age upon this earth, has really little to do with this science. The history of the past can be of use only so far as it bears upon the present. Except Mrs. Shelley's *Frankenstein*, we know of no man that has yet come into the world without being born; and as to his age, whether six thousand or six hundred thousand years, for practical purposes we cannot go beyond the comparatively modern date of written record. In deference, however, to those who think such matters of importance, we will consent to go half-way with them, and take woman's advent into this world upon authority. A modern sceptical philosopher, Dr. Whately, defines woman as 'a creature incapable of the exercise of reason, and that pokes the fire from the top;' but this is since the fall, for we have it on the recognised authority of Matthew Henry's Commentary, that man was dust refined, but that woman was dust double-refined, one remove further from the earth; and that Adam slept while his wife was in making, that no room might be left to imagine that he had herein "directed the Spirit of the Lord, or been his counsellor." And also we are told by the same learned Commentator, having reference, doubtless, to the obedience that a woman is known to owe to man, 'that the woman was made of a rib out of the side of Adam; not made out of his head to top him, not out of his feet to be trampled upon by him, but out of his side to be equal with him, under his arm to be protected, and near his heart to be beloved.' Now we are willing to take all this about woman on such excellent authority, so that anything we have to say less orthodox about man may be condoned. A 'Science of Man' ought to teach us how to make a man according to the most approved pattern, and with all the modern improvements. Anthropology, it must be confessed, has advanced little in this direction at present, and has occupied itself too exclusively with scratching among the dry bones of past ages; but it is with living function and not dead form that we have to do."

Mr. Bray says, "there exists a curious difference of opinion amongst

the Members of the London Anthropological Society on the subject of the physiology of the brain." We believe that on this and other subjects there must, of necessity, be great differences of opinion ; if men were all of one opinion there would be no necessity for their meeting together to discuss subjects. Mr. Bray seems to be in a dreadful hurry that every one should believe as he does ; he seems to be one of the few remaining mongrel philosophers who believe in Spurzheim as their god, and George Combe as his prophet. "Mr. Bray may yet become himself an interesting object of study, as being the last of his kind. We are sorry for Mr. Bray ; if he could only get phrenological jumble out of his blood he might yet write wisely. Mr. Bray asserts "the bridge between physics and metaphysics has been found." By whom? This we are not told. There is just a glimmer of hope that Mr. Bray may yet be saved from further folly when we read thus : Metaphysics "is based on physics ;" we cannot say that such is the fact, but we admit it ought to be. We wish Mr. Bray would let us have a look at the metaphysics which is based purely on physics. Mr. Bray believes that phrenology is such a system ; we are sorry for his delusion.

A specimen of Mr. Bray's views will assist to dispel the idea that we have yet discovered the physics of the brain. He says :—

"We might have brains translating the forces from without into mental impressions of an entirely different kind ; as it is, no two persons' mental impressions are the same, but vary in clearness, in intensity, and in breadth, according to the size, and quality or temperament, of the organ or part of the brain with which they are connected. Transmuted forces thus passing through one portion of the brain, and acted upon by forces from without, create the world as it appears in our consciousness ; passing through other larger portions of the brain, the organs of the propensities and sentiments, they create the world of our likes and antipathies, called the moral world. This world of ideas and feelings, about which we make such an undignified fuss, is purely phenomenal, and passes away with each turn of the great kaleidoscope—with each evolution and correlation of force. Our joys and sorrows, our hopes and fears, our sins and sorrows, our good and evil, are purely subjective, affecting only ourselves ; of the One Great Reality, or Entity, or Spirit, or Power, or Force, that underlies *all* phenomena, we can know nothing ; our own will-power alone constituting a distant analogy. We know, however, that,

'For love, and beauty, and delight
There is no death nor change.'—*Shelley*.

With respect to races of men and the permanence of physical types, "the Darwinists assume that all animals, including man, are derived from a small number of simple beings, possibly from a primordial monad. The monogenists, with much less boldness, are of opinion that all human races are derived, if not from a single couple, at least from a certain number of primitive men perfectly resembling each

other. The Polygenists finally assert that human types are only liable to slight modifications ; that the chief physical characteristics are permanent ; and that, consequently, the actual diversity of races can only be attributed to the multiplicity of their origin.* We greatly incline to the latter hypothesis. Without going with the Darwinists to the very beginning, it seems probable that the causes that were equal to the production of the simple beings could have produced also the more complex, and still more probable that the causes that could have produced a single man could have equally produced all the varieties. We believe, with Professor Macdonald, in 'the separate centres of creation of the different races adapted to the different parts of the world, and that the east and midland mountains had peculiar creations adapted to them.' The Professor shows us how 'a due consideration of the progressive development of an embryo or germ within the Graafian vesicle would militate against Darwinism in any attempt to press hybridism beyond the boundary of nearly allied species, and also against breeding among hybrids, themselves being carried beyond the third or fourth generations, unless refreshed by one or other of the originating species.'†

"Races that had probably the same ancestral types, such as those which now inhabit Europe, are crossed with advantage, but the crossing of distinct races makes mongrels ; what the inferior gains the superior loses ; and there is always a tendency to revert to the original or ancestral type. It will be easier then to breed from good stock, and thus fill the world on the Malthusian principle, than to improve the inferior races, which, on the principle of natural selection, cannot fail to be 'civilised' off the face of the earth."

We must decline to follow our author into the second part of his pamphlet, entitled "The Occult Powers of Man." We quote the two concluding pages, and are glad to see that our author is not so severe on us at the end of his work as at the beginning. We will only hope that Anthropologists will, ere long, be favoured with the system of metaphysics, "which is based on physics." Mr. Bray thus ends his pamphlet :—

"Force is persistent, and both body and mind are indestructible, except in form ; and what new form they may take in the future it is impossible to say ; but, if it be such as has been assigned to them by the spiritualists, it is a dark look-out for us indeed. What is the nature or essence of that Agent, or Substance, or Being, or Entity, or Force, underlying all phenomena, but whose mode of action only is known to us, we do not know. By force or power we mean the cause of all things, that which can and does produce all phenomena ; but this power is as inseparable from its source, or that to which it belongs, as motion is from the thing that moves. If unity is claimed for the mind, it lies in that which underlies *all* phenomena, and not in its mode of action, alone known to us ; and however varied these phe-

* *Anthropological Review*, January, 1868, p. 42.

† *Journal of the Anthropological Society*, pp. 118-122, July, 1868.

nomena, it may be that a few simple laws underneath, attributes of the source of all power, produce all the variety: 'Pleasure and pain being to voluntary motion what attraction and repulsion are to inorganic matter, and the Science of Morality to the analysis of pleasure and pain what the Science of Chemistry is to the different substances that compose this globe.*' This unity of the noumenon, &c., may also account for all that at present seems so mysterious to us in clairvoyance and other normal and abnormal conditions of mind. Whether we have any powers or intuitions which enable us to see 'through phenomena to laws,' and through laws to the Lawgiver, is yet matter for investigation. It would seem as if there were occasional gleams through small chinks which will widen with the ages. We have 'a noumenal integer phenomenally differentiated into the glittering universe of things;' and to pass from one to the other, to be absorbed in universal being, is the great aim of the Buddhist, whose one infallible diagnostic is the belief in the infinite capacity of the human mind. The natural eye, he says, takes account only of appearances; it requires the severest discipline for a man to behold the reality. Prayer, fasting, and solitude constituted this discipline, and certainly as the brain is emptied of its natural force by these means, it is filled with force from without, often inducing a state of trance in which the barrier between individual and general mind seems at least to be partially broken down. But whatever may be the powers of man, and the relation of the concentrated forces which constitutes his individuality, to the natural forces around him, we can scarcely be said yet to have placed their investigation on anything like a scientific basis; and Mr. Le Gros Clark, in a lecture recently delivered to the Council and Members of the Royal College of Surgeons, said that the nature and functions fulfilled by the electric fluid in the sustaining of animal and vegetable life is still as profound a secret as was the law of gravitation before the days of Kepler and Newton. When this is done and the light of science is let into this department, we shall at least be able to do for the onward progress in mind as much as steam has done for mere material civilisation. The power of the ancient magician, the miracles of all religions, the powers of clairvoyance are real, and we have only to bring them under law to make them serviceable,—not, as heretofore, to chicanery and superstition, but to a great advance in mental science. Surely this is the legitimate function of the Anthropological Society. The *Anthropological Review*, April, 1867, says, 'To whatever cause it may be attributed, let us begin with the rather humiliating confession that, anthropology, both in its classification and terminology, is in a miserably confused and almost chaotic condition.' This, I fear, is too true, although the last number of the *Review and Journal* (July, 1868) shows a more living interest. Would not the objects of the society be better promoted if 'The Science of Man' were divided into departments, and committees were appointed to *investigate* and report not on what man *was*, and how and when and where he began, but on what he is now, here present, and what he may become under scientific development?"

* *Philosophy of Necessity*, p. 21, second edition.

ON THE WEIGHT OF THE BRAIN IN THE NEGRO.

To the Editor of the Anthropological Review.

SIR,—In the article of the last number of the *Anthropological Review*, entitled “The Negro as a Soldier,” said to be a “valuable report by Sandford B. Hunt, M.D.,” there is, at p. 51, what is entitled an “Ethnographical Table,” which appears really to be a *table of the weight of the brain* in four hundred and five soldiers, who died during the late war in the United States, and whose autopsies were “made under the direction of Surgeon Ira Russell.” This table is, perhaps, not so well authenticated as might have been desired, as, from the above statement, it cannot be quite unhesitatingly attributed to Dr. Ira Russell, and, next, no particulars are given with respect to the mode adopted in determining the weight of the brain. We are left in doubt, whether the brains were divested of their membranes and drained of their fluids, and whether the *medulla oblongata* were reckoned a portion of the brain and weighed with it, as is most likely to have been the case.

The determination of the weights of the brains of 405 adult men, in all probability in the vigour of life, by actual metrological observation, was in itself an investigation of very great interest and importance. Hence it is much to be regretted that there should be any doubt whether means were taken to render the observations as definite and exact as possible, and that explanations have not been given, so that the observations might be fully understood and perfectly relied upon.

Of the brains enumerated in this table, 141 are those of “black,” that is Negro, men. The average weight of the brain in these 141 Negroes is stated to have been 46·96 ounces avoirdupois. The largest weighed 56 ounces, the least 35·75 ozs., and, in other respects, they stood in these relations:—5 weighed between 55 and 60 ozs. ; 42 between 50 and 55 ozs. ; 51 between 45 and 50 ozs. ; 38 between 40 and 45 ozs. ; and 3 between 35 and 40 ozs. It will be seen that this enumeration accounts for only 139 of the brains, not the 141 of the table.

The writer, after giving the above table, next speaks of the same series of autopsies made by Dr. Ira Russell, in which the weight of the brain is given in the same number of cases, viz. 405, adding, “of which 24 were white and 391 black,” *i.e.*, reckoning all those to be black who had any degree of Negro blood.

But the point to which I particularly wish to draw the attention of

your readers is the general conclusion, as to the average weight of the Negro's brain. This deserves to be made a little more conspicuous than is done in the table. It is stated to be 46·96 ozs. av., which is as nearly as possible 47 ozs. Probably the most accurate and reliable previous observations on the weight of the brain of the Negro, ascertained by actual weighing, are those of Professor John Reid and of Dr. T. B. Peacock.* The average brain-weight of the Negro men was 44·34 ozs., that of the women 43·50 ozs., the mean of the sexes being 43·92 ozs.; but it is with the men whose average brain-weight was 44·34 ozs. that we have to do, when we compare this with that of the Negro soldier, which was larger, viz., 46·96 oz. In the tables formed by myself† the following results of the brain-weights of *male* Negroes come out. In 12 skulls of "tribes unknown" the average was 44·30 ozs.; in a Joloff, 46·92 ozs.; in a Foulah, 43·42 ozs.; in a Mandingoe, 47·14 ozs.; in a Sergia, 46·92 ozs.; in a Fantee, 41·60 ozs.; in 3 Ashantees, 42·91 ozs.; in 5 Dahomans, 46·63 ozs.; in 2 Bakeles, 50·57 ozs.; and in 2 Congos, 39·76 ozs. These yield an average of 45 ounces. The weight of the brain of the male Guinea Negro examined by Professor L. Calon was only 44·44 ozs.‡ So that Dr. Ira Russell's experiments afford a brain-weight for the male Negro rather heavier, from one to two ounces heavier, than those of other observers. Dr. S. B. Hunt allows that this weight is "over five ounces *less* than that of the white."

He next goes into the speculation whether what we name civilisation, freedom, and education, "the new nationality of America," has the effect of enlarging the brain, to which, as he remarks, general opinion leads. But, if this were so, we must attribute the large brains of the American Negro soldiers to some such influences in their cases, to which it is certain Dr. S. B. Hunt would not consent. The influences to which the Negro of the United States has been exposed are characterised by the *absence* of those which are supposed to enlarge the brain; thus Dr. S. B. Hunt's table proves too much; it proves that Negroes in a state of slavery have heavier brains than those in Africa, at the same time that it contradicts or refutes the above speculation. There is, however, not any good ground to think that the speculation, or the arguments founded upon it, are of any particular value. The weight of the brain, like all the other peculiarities of human races, is a *race character*, appertaining to each race specifically.

* "On the Weight of the Brain of the Negro, *Memoirs of the Anthropol. Soc. of London*, vol. i, p. 65 and 520.

† "Contributions towards determining the weight of the Brain in different Races of Men," *Philosophical Transactions*, 1868, p. 505.

‡ "The Brain of a Negro of Guinea," *Anthropol. Review*, No. xxii, 1868, p. 279.

In Dr. S. B. Hunt's concluding remark this position is hardly sufficiently attended to. He says "they (the American Negroes) have already the same cranial capacity with the Hindostanees, who have developed a high civilisation, a profound philosophy and a rational religion." Here Dr. S. B. Hunt is disposed to underrate the Negro of America, for he has, according to the table, a larger average brain-weight than the natives of Hindostan, whether we allow to the latter "a high civilisation, a profound philosophy, and a rational religion," or not. Dr. S. B. Hunt is, no doubt, comparing the civilisation, philosophy, and religion of the two races, Negroes and Hindostanees. In the tables above referred to the male Hindoos are shown to have a mean brain-weight of 44·22 ozs., and the mean of Dr. S. G. Morton's table was still less, only 41·74 ozs. So that we have a comparatively "high civilisation, a profound philosophy, and a rational religion" developed among a people who are distinguished among human races for the remarkable smallness of their brains.

If you consider these remarks of sufficient importance, please to give them a place in your next number.

I am, your obedient servant,

J. BARNARD DAVIS.

Shelton, Hanley, Staffordshire, March 2, 1869.

MAUDSLEY ON PHYSIOLOGY AND PATHOLOGY OF THE BRAIN.*

It is not very long since mental diseases have been considered as a kind of felony, and the poor patients treated as criminals, put into chains, imprisoned and condemned to corporal punishment, until the great Pinel came forward as an attorney for the poor and unhappy lunatics and pleaded their case in a most simple but very successful manner. His work, *Traité Médico-Philosophique sur l'aliénation mentale* (Paris, 1808), is one of the brightest ornaments in medical literature, and the success gained one of the most noble triumphs in the history of humanity.

We cannot wonder that under circumstances when mental maladies were considered the work of the devil, the treatment consisted in exorcisms, and the most perverted means were used in order to get rid of the evil spirit. Pathological anatomy remained silent, and thus

* *The Physiology and Pathology of the Mind.* By Henry Maudsley, M.D. Lond., Physician to the West London Hospital, etc., etc. London: Macmillan & Co.

it was possible that a genius like John Hunter could maintain that mental diseases leave no trace of their former existence impressed into the brain after the death of the patients. It was to show the fallacy of this conclusion that Dr. A. Marshall anatomised a great number of brains in the old Bethlehem Hospital, but his work, *The Morbid Anatomy of the Brain in Mania and Hydrophobia* was only published in 1815.

It is true that English literature is possessed of valuable works on mental diseases, written in the seventeenth and eighteenth centuries, and Burton, whose classical work, *Anatomy of Melancholy*, was published in 1627, has deservedly been called "the Shakespere amongst Psychologists." Yet it is only after Pinel's great reformatory efforts that English medical literature has contributed both in an extensive and excellent manner towards the humane edifice of which Pinel has laid the foundation stone.

Before the eighteenth century there were only two asylums in all England, viz., Bedlam and St. Luke's. The inmates of which, who were supposed to be influenced by the moon, were fettered at each change and flogged in order to prevent the irritation expected to be caused by that luminary, an unfortunate error to which Dr. Mead's work, *Medica Sacra*, 1749, has contributed not little.

The first asylum in which the new principle of Pinel bore sway was that erected by William Tuke, near York. Tuke, sixty-four years old in 1796, undertook the duties of superintendent to the hospital, to which he remained attached until his death in 1822. Although his humane principles became general only a long time afterwards, yet the literature of that branch of medical science took another turn, and the management of many asylums imitated the lucid example of William Tuke.

In our present day we find the most renowned names of English authors amongst the writers on the subject, such names as George Burrows, Prichard, W. C. Ellis, J. Williams, Thurnam, Monro, Winslow, and others.

The work of Dr. Maudsley, treating of the physiology and pathology of the mind, has been received with great applause and encomium by the medical profession, as well as by philosophers. The study of the human mind in our present days forms no longer part of abstract philosophy. To have a claim of any value, it must be based on observation, both in the living subject, healthy as well as diseased, and on extensive and minute pathological researches into the condition of the brain. This basis Dr. Maudsley takes as his ground to stand upon, whence he shows ~~the~~ which the study of mind is to be pursued, and lays down the laws on which the healthy brain acts.

It is on this same ground that he shows the connection of mind and the nervous system, and on which emotion, volition, memory, imagination, and all the properties attributed to the mind are discussed. And all this is treated in a most genial philosophical manner, and written in a language clear and eloquent at once. When touching on former errors, the author hints to still existing prejudices, particularly influencing the study of mind which some would still like to look upon as belonging to the province of metaphysics.

"Can we wonder, then, that the erroneous method (metaphysical) was triumphant in Greece in the fourth century before Christ, when it is only recently in England, in the nineteenth century after Christ, that the barbarian's reverence for the dead body has permitted an anatomical dissection, and when the finger-bone of a saint, or a rag of his clothing, is still treasured up, in some parts of the world, as a most precious relic, endowed with miraculous virtues! The evil of the metaphysical method was not intellectual deficiency only, but a corresponding baneful moral error."

When mind was considered by philosophers who, perhaps, had never seen a brain in their lives, they generally started from the phenomena observed in adults, and took no notice of the first dawning of the soul in infants. Animals were entirely excluded from their consideration, as not possessing mind at all. Our present position, when the mental phenomena are studied by physiologists, is totally different. We know mind only in connection with the body, and are aware that the mental conditions change with alterations of the frame—*mens sana in corpore sano*—and, therefore, the condition of the body cannot be excluded from the study of the condition of what is called soul, mind, etc. But the most important part of investigation is the comparative pathology beginning where the first mental movement becomes perceptible and going through all stages of development, up to the adult human being. "Where," says Dr. Maudsley, "has the animal any place in the accepted system of psychology? Or the child, the direction of whose early mental development is commonly decisive of its future destiny?" To speak of an induction, where so many important instances are neglected, and others are selected, according to caprice or the ease of convenience, is to rob the word of all definite meaning and most mischievously to misuse it. A psychology which is truly inductive must follow the order of nature, and begin where mind begins in the animal and infant, gradually rising thence to those higher and more complex mental phenomena, which the introspective philosopher discerns, or thinks he discerns. Certainly, it may be said, and it has been said, that inferences as to the mental phenomena of the child can be correctly formed from the phenomena of the adult mind. But

it is exactly because such erroneous inferences have been made that the mental phenomena of the child have been misunderstood and misinterpreted, and that psychology has not received the benefit of the correction which a faithful observation of them would have furnished. It was the physiologist who, by a careful observation of the lower animals, "having entered firmly on the true road, and submitting his understanding to things," arrived at generalisations which were found to explain many of the mental phenomena of the child, and which have furthermore thrown so much light upon the mental life of the adult. The careful study of the genesis of mind is as necessary to a true knowledge of mental phenomena as the study of its plan of development confessedly is to an adequate conception of the bodily life."

These few passages may suffice to indicate the direction in which Dr. Maudsley's method tends, whose excellent work, which has already become standard, we most urgently recommend to the careful study of all those who are interested in the physiology and pathology of the brain.

RESUMÉ OF THE "BULLETINS" OF THE PARIS ANTHROPOLOGICAL SOCIETY.

(From June 1867, to January 1868.)

By E. VILLIN, F.A.S.L., F.R.S.L.

THE Paris Society has published its labours, during the half-year ending December, 1868, in two numbers of "Bulletins," which we had promised to review ever since their publication; but the multiplicity of matters which this *Review* has had to deal with, has, until the present time, prevented us from fulfilling this pleasurable duty.

Anthropological labours in Paris are quite as interesting to us as the labours performed by the English Society. It is, however, impossible to give our readers a complete report, and we may be excused for only giving short abstracts of researches and papers, to which a complete translation alone could do justice, so replete with facts and matter are they. We therefore advise those students of anthropology, who desire to see the progress that this science has been making everywhere, to read the French "Bulletins" themselves, and we promise them to be amply repaid for the trouble; for, as Horace has it, "*Est operæ pretium.*"

In a short but learned paper, called "Phases Sociales," M. Letourneau, after a survey of the different races of man inhabiting the globe, comes to a conclusion with which we entirely agree; namely, that "individually and collectively man passes through a series of phases

succeeding and producing one another ; that at first—a being purely and simply *nutritive*—he becomes specially *sensitive*, then *moral*, and lastly *intellectual*. . . . The man in whom nutritive wants predominate, is at the bottom of the scale ; and the man who has moral and, above all, intellectual wants, stands at the summit of civilisation ; whilst the man whose wants are *sensitive*, stands in the middle of the social scale. But, adds M. Letourneau, humanity has not anywhere, as yet, attained the *intellectual* point. The man in whom all these aptitudes, all these wants would be coexisting—with no other differences than those of energy—would be, would constitute complete man.”

M. Lagneau, in a learned paper on the “Anthropology of France,” carefully reviews the types of nearly every province of the French empire. For this the author has consulted the best writers, and has availed himself of the observations made everywhere by the “Conseils de Révision” on the yearly military recruiting ; he also made many observations himself, and this contribution to the science of man seems altogether reliable. But it is too full of particular details for us to attempt to give an analysis of it ; we must therefore refer our readers to the original itself. One fact, however, we must not pass unnoticed : M. Lagneau insists upon the importance of studying the idioms and *patois* of various departments, some of which, as M. de Ranse has proved, directly descend from the original settlers.*

Dr. Destruges, of Guayaquil, on sending to the Paris Society a human head beautifully mummified, still ornamented with its flowing black hair, but reduced by an artificial process, after death, to the size of a small ape’s head, also sent some information as regards the means employed by the Indians to obtain this curious result. As this subject has not yet been treated scientifically by English anthropologists, we shall give M. Destruges’ letter in full :—

“The process through which the *Jibaros* reduce in size, and preserve for a very long time, the heads of their enemies killed in war, is no longer a mystery. They roll the leaves of a plant (to us unknown) into a ball, and this ball is heated to an elevated temperature by a gentle fire, until the external surface presents an almost incandescent aspect. This incandescent ball is then introduced into the soft parts of the head, by that time already separated from the bones of the skull. The soft parts immediately shrink, and receive from the burnt leaves antiseptic and preserving principles. It is these soft

* The Reviewer knows of a village in the Marne department, called *Courtisols*, where the *patois* is absolutely unintelligible to all the surrounding villages ; and there is a tradition in the place which, wrongly or rightly, makes the *Courtisiens* a small colony of Huns, who remained there after Attila had been defeated a few miles off.

parts, dried and reduced in size, which the Indians call *chauca*. Upon festival occasions, they carry these *chauchas* dangling from the ends of their lances, and they relate the history and the exploits of the victim whose head now hangs from their weapons."

Are there no botanists who could tell us the name of the plant unknown to M. Destruges? and are there no anthropologists who could use the same means for preserving dead remains? We are fully aware that these mummies are deprived of those characteristics in feature and measurements which alone have any value in the eyes of students; but, at the same time, there are occasions when travellers can have no better means (the plant being known) of bringing specimens home; and when their object is merely to preserve tendons, muscles, or fibres, in their right position in nature, a reduced specimen may be well worth preserving. A traveller cannot possibly bring home, from Central America or Central Africa, a single bulky specimen in spirit of wine; whereas he could, with facility, pack many dry and reduced specimens that, in this shape, would be eagerly studied by the students at home. At a time when the subject of the Jívaro Indian head was comparatively new in England, a paper was published, in 1862, by Don Ramon de Silva-Ferro. This, however, does not give us the method of preservation, which Dr. Destruges has above described.

M. Bouvier has a short paper on "Comparative Craniology of Man and Animals," which led him to the same conclusion as that arrived at by Gratiolet,—“that, whilst admitting that the nervous apparatus, which pervade the cortical substance, have a limited and localised repartition; admitting, also, that special aptitudes can result from them in diverse individuals, I believe that every part of the cerebral envelope equally participates in the power of thought.”

M. Kopernicki, of Bucharest, has sent the description of a new Craniograph. This instrument, if well used, gives the measurements of contours with a mathematical accuracy; but it requires experience and time on the part of the craniologist. In spite of this drawback, its results are such that we wonder that the London Society should have delayed the acquisition of this beautiful instrument so long. Perfect accuracy, we must always bear in mind, can alone insure anthropology success.

“Polyzoism” is the title of a most interesting paper by M. Durand (de Gros). If the author of the contribution can establish his theory, it will undoubtedly be a revolution in science of immense importance: for it would reverse what has been considered almost a dogma for a long period. The conclusions of M. Durand, after enumerating his facts, are these:—

"Physiology, medicine, psychology, and morals have agreed, until the present day, in regarding man as a *unity*,—a unity, living, feeling, and thinking, entirely compact and irreducible, as an animated and *simple* body; and, upon this first and common belief, all their dogmatical and practical institutions were framed. However, new facts seem now to demonstrate that this belief is an error; that the human being is, in reality, a collection of organisms, a collection of lives and distinct "ego's", and that its apparent unity lies wholly in the harmony of a hierarchical *ensemble*, the elements of which, connected by a narrow coordination and subordination, yet carry, each in itself, all the essential attributes, all the primitive characters of the individual animal. Such a system is, doubtless, alarming for a vast system of established ideas and things; but let us follow it in its consequences, and we shall be convinced that, if it *destroys*, it also *builds*, and that its work, full of positive truths, is a thousand times preferable to the scaffolding of illusions to which this work will be substituted."

These views created quite a sensation in the Paris Society; and M. Dally, one of its most brilliant members, acknowledged that M. Durand's views upon the multiplicity of centres of vital action really deserved the most serious meditations. "Without being able," said he, "to form as yet an opinion upon their accuracy, I seize this opportunity for supporting his critique, as regards the *abyss* which, according to some naturalists, separates the invertebrates from the vertebrates. The idea that these two branches are constructed on a different plan, whilst evidently the functions are the same, the organic elements are identical, is based upon the sole difference that the apparatus are more or less perfect. Nervous system, circulation, digestion, locomotion, in the two branches, have everything in common; and we can establish the most rigorous analogies between the apparatus, even if we had not the *Amphioxus* and its fossil congeners. I then ask where the abyss is, since we have a ganglionic chain, and the cephalic ganglions of the annulosa, the vertebral channel of the crustaceans, and the pulmonary respiration of the arachnids, etc., etc., to bring against the organic systems of the vertebrates? It would be high time to renounce these pretended abysses, when everything can show or prove, even in the entire modern fauna, incomplete as it is, a more or less, but an undeniable series."

A very animated discussion, full of interest, was caused by a paper upon "The Proportions of the Body according to Races," by Dr. Weisbach. This discussion was carried on by the best Paris Anthropologists to great lengths, and we advise our London students to read it with care. The observations of Dr. Weisbach bear upon ten races,

and he has come to certain conclusions, which were not unanimously accepted, after comparing these races with the Europeans. "The greatest propinquity with the conformation of the anthropomorphic apes indicating the most inferior degree of the human race, we must conclude that the race which possesses the largest amount of simian proportions upon the greatest number of parts of the body, must be the most inferior. Yet we feel embarrassed to give an answer, because in the small number of points upon which we can make a comparison between man and the orang, *the simian resemblance is in no wise exclusively concentrated in ONE race; but it divides itself, as to the different parts, amongst the different races, and this so effectually that there remains to each a lesser or greater share of this parental inheritance. Even we, Europeans, cannot pretend to have entirely severed ourselves from this parentage; witness the shortness of our hand relatively to our arm, and amongst the Slavons and Roumans, the great length of the fore-arm relatively to the arm?*

"On examining the different races enumerated from this point, we see that none is completely deprived of dimensions of certain parts which reapproach it nearer to the type of the orang more than the others. The Javanese and Madurians are favoured, because they approach it by the smallest number of points. . . . Whereas the Australian presents the most numerous simian similarities,—in the length of the feet, the smallness of the legs, the broad nose and mouth, the elongated arm, the broad feet, and the thin calves."

MM. Pruner-Bey, Alix, Rochet, Broca, Gavarret, Giraldés, Dally, Pouchet, Bertillon, and de Bligroïères, we repeat, discussed this subject in a very scientific and almost exhaustive manner; and, in our opinion, the discussion by far surpasses the paper which caused it in importance. It is given *in extenso* in the "Paris Bulletins," and we regret not to be able now to translate it for the benefit of all our readers.

M. Broca has a Paper on the *Relative Proportions of the Superior and Inferior Limbs amongst the Negroes and the Europeans*, which, like every contribution from that *savant*, is quite an Anthropological treat, for it is full of measurements and facts masterly classified. We consider this paper as an excellent sequel to Dr. Weisbach's, above mentioned. The results arrived at by M. Broca are summed up thus:—

"1. The length of the superior limb, compared to that of the inferior, is less in the negro than in the European. In this the Negro is further from the simian type than the European.

"2. The length of the humerus compared with that of the femur, or with that of the inferior limb, is also less in the Negro, who, in this again, is more removed from the simian type than the European.

"3. The length of the humerus, compared to that of the radius, is much less in the black than in the white. This character brings the Negro nearer to the ape.

"4. The excess of length of the radius in the Negro, compared to the humerus, partly depends upon the shortness of the humerus, but not exclusively. The radius of the Negro is, in fact, longer than that of the white man, when it is compared with the inferior limb.

"5. The superior limb of the Negro, therefore, presents two opposite characters: for whilst, on the one hand, by the length of the radius, the Negro is nearer than the European to the simian type; he, on the other hand, is removed from it by the shortness of the humerus."

These intercrossings are not rare in the different races; they constitute facts little favourable to the idea that all the types of humanity are derived from one type, and they appear to M. Broca to give their testimony in favour of the opinion of the polygenists.

Other subjects, such as Languages, the Age of Stone, Miocene Man, Man during Geological times, and a great variety of skulls and bones, form a series of papers which we strongly recommend to the attention of the student of Anthropology; but we, unfortunately, cannot, for want of space, give any abstract of them. There is, however, a series of contributions on "Civilisation," and "Religions as bearing on Civilisation," which we had promised ourselves to succinctly analyse, so masterly were these subjects treated by MM. Letourneau, Condereau, Pellarin, and Bataillard, from different points of view; but we must forego this duty until the next number of this *Review*. We might say that these questions hardly belong to Anthropology, and this view was at first taken by the Paris Society; but, upon reconsideration, they resolved to give full scope to them, and with a tolerance which we commend to the example of the London Society, five or six learned treatises were read, discussed, and published, mostly upon religion. "A human produce," says M. Bataillard, "which has contributed to civilisation, has had all sorts of influences, and which the man of science, unless he be afraid of fanatics in all countries, cannot ignore, pass by, and treat as if it did not exist. We should therefore study it under all its aspects, as we study politics, art, or literature, since, like these, it contributed—although sometimes in a deplorable manner—to the development of mankind."

We really do not see why the English Society, living as it does in the midst of a tolerant people, Protestants, should be less tolerant than its Paris sister Society. We are convinced that, provided the discussion should be conducted with the same amenity of language as distinguishes our neighbours, no single Fellow of the Anthropological Society of London would at any time object to such important matters being brought under his notice.

ON THE LOCALISATION OF THE FUNCTIONS OF THE BRAIN, WITH SPECIAL REFERENCE TO THE FACULTY OF LANGUAGE.

By JAMES HUNT, Ph.D., F.S.A., F.A.S.L.

(Historical part continued from p. 116, No. 24.)

IN the preceding articles it has been abundantly shown that the fundamental principle that the brain is an aggregate of different parts, each subservient to the manifestation of some intellectual phenomena ; and that the dispositions of men may be ascertained from the external form of the head, had been promulgated for many centuries before the time of Gall.* It was, however, reserved for Gall to infuse new vigour into the old doctrine of localisation, and to devise a system which was further elaborated by his disciples, and which constitutes now what I have elsewhere called the "bastard science of phrenology."† It would, however, be most unjust to make Gall responsible for all the sentimental cant and arrogance of those who have called themselves his disciples. Strange as it may appear, few such men as Gall have had a smaller number of disciples than this celebrated German physiologist and physiognomist. Gall appeared at a time when the whole of Europe was in a state of excitement, and his teaching was looked upon as tending to promote revolutionary ideas, materialism, and all the rest of the popular bogies in vogue even in scientific circles to the present day.

It is not now my intention to write the life of this remarkable man. Gall was, however, neither a prophet nor a very original thinker ; but he was a close and patient observer of nature. He was, indeed, more than this : he was one of those rare instances in humanity who combined in his own person the careful observer with the acute and logical reasoner. Gall has had few, if any, followers worthy of him ; the disciples have all been vastly inferior to their master.

We have said that Gall revived the old doctrine of localisation, and that this theory is now, or was until lately, known under the name of "Phrenology, or the doctrine of the mind." Alas ! how poor Gall would have repented being the founder of such a jumble as modern phrenology ! How his good sense would have revolted from having

* Franz Joseph Gall was born at Tiefenbrunn, 19th of March, 1758, died at Paris 1828.

† "A mixture of Physics and Metaphysics," see address to Dundee Anthropological Conference, *Anthropological Review*, No. 20, Jan. 1868, p. 77.

his observations on the "functions of the brain," called "phrenology or the doctrine of the mind!"

Gall has been in this respect nearly as unfortunate as Blumenbach, who, we are told by a recent writer,* was the "founder of ethnology." It is hardly necessary to observe that Blumenbach never invented or once used the word "ethnology"; although it is not so generally known that Gall never coined or used the word "phrenology." It is not a little remarkable that the fame of both these great men should have to suffer for the indiscretion of their so-called disciples. Blumenbach founded a special branch of science which he named over and over again "Anthropology." Gall in like manner elaborated the observations of his predecessors on the functions of the brain, or, in classical language, the science of encephalonomy, and called it "a system of physiognomy." When Gall first published his lectures some of his followers called his system "the science of craniology." Against this and all such names Gall protested, and said that such names misrepresented his labours, and that he was concerned in the first place with the functions of the brain, and in the second with the physiognomy of the skull.

We must, therefore, do the same justice to Gall as to Blumenbach, and never either call the one a phrenologist or the other an ethnologist. Gall cared no more about the nature of the mind than Blumenbach did about the composition of nations. Both the aggregate of phenomena called mind and the perhaps heterogeneous concourse of atoms constituting nations lie outside the domain of the science which they respectively founded.

It signifies little for science who it was that was so ill-judged as to describe observations on the functions of the brain as the doctrine of the mind, but the following facts are worth mentioning. The originator of the word "phrenology" was Dr. Forster. It gives no small insight into the character of one of Gall's so-called disciples—Dr. Spurzheim—that he claimed to have originated this word himself. Notwithstanding all these attempts to mislead the public as to the real nature of Gall's observations and theory, there now seems to be no doubt that the odium which Gall has incurred from having his name mixed up with phrenology will be as effectively removed as the name of Blumenbach has been vindicated from being the founder of ethnology. A stray writer here and there may yet try to sully the reputation of Gall by identifying his name with a mongrel science he never founded: but it is evident that the time has now come when scientific men are prepared to render equal justice to the founder of the science of mankind, or anthropology, and the founder of the science of the functions of the brain, or encephalonomy.

* Vide Professor Huxley, *Fortnightly Review*, No. 3, p. 263.

Gall's system consists essentially of two distinct propositions: first, in the assumption of a number of distinct cerebral organs for the different mental phenomena—organology; secondly, in the determination of the respective cerebral organs by the inspection and palpation of the cranium, which may be termed cephalonomy, or organoscopy.

A single glance at these propositions shows that they are in some respect independent of each other; for organology, *i.e.* the assumption of a plurality of cerebral organs, for different functions, may be true, and may form an important and reliable basis for the great science of encephalonomy, whilst cephalonomy, *i.e.* their determination by the external form of the cranium, may be false. On the other hand, cephalonomy in the above sense can have no existence as a science unless organology be true.

I wish it to be well understood that I am not dealing now with the whole of Dr. Gall's observations and theories; much less do I purpose now to attack or defend in detail the modern exponents of his system. Gall, like all other real scientific physiologists, was a student of the functions of organic structure. That he was not free from what is the great weakness of scientific men of the present day, *viz.* the enunciation of speculative opinions, must be admitted; but the real bent of Gall's observations was far more sound and scientific than is the conduct of many who now attack his doctrines. We are not now called on to accept Gall's theories; but in duty bound we have to verify his observations. The present systems of phrenology, with all their assumptions and erroneous inferences, I do not hesitate to assert my belief will soon become a thing of the past. It is only by their complete destruction that we can ever hope to establish a reliable science of encephalonomy and cephalonomy, based on correct and lasting scientific principles.

All true science must, from its nature, be progressive: and this the modern elaborated system of "the doctrine of the mind" can never be. Let us all acknowledge most humbly that we know nothing of the "mind" apart from organisation. All our knowledge as scientific observers can alone be obtained by examining structure in action. Where structure is at rest there are no mental phenomena. Different organic forms when associated with different structures necessarily give rise to different phenomena. This is a law of all organic life, and is as applicable to the human brain as to any other organic structure.

Dr. Gall gave his first lectures on "Schädellehre" in Vienna, in the year 1796. The simple and tangible manner in which he appeared to lay open the secret workshop of human mental phenomena to profane inspection caused great excitement among the ignorant public and

great consternation among the theologians, mystic philosophers, and court impostors of the time. This coalition of rabblecraft, priestcraft, philosophycraft, and courtercraft proved too strong for Dr. Gall. His lectures were forbidden, and he sought an asylum in Paris, where henceforth he fixed his residence, and where he died in 1828, and was buried in the cemetery of Père la Chaise. Gall's head is now in the Natural History Museum of Paris.*

At Rome the Pope paid the same compliment to Gall as he did to Copernicus. In Germany Kotzebue played the same part as Aristophanes of old, and made Gall the laughing-stock of the people. The philosophers vented their rage at their occupation being taken away from them by a mere student of the functions of the brain. Schaller said that the theory was "so indefinite and presumptuous as not to be embarrassed by any facts it meets with." Jessen also thundered against organology, and joined with Volkmann, the physiologist, in misrepresenting the real character of Gall's theory. They charged Gall with only estimating the quantity and not the quality of the brain. This misrepresentation has been continually reiterated down to the present day. Gall, however, found zealous supporters in Reil and Loder in Germany, and Vimont and Broussais in France. Professor Bischoff, in his *Exposition of Gall's System* (Berlin, 1809), says :—

"You must see and hear the man yourself to find out how free he is from all charlatanry and transcendental enthusiasm. Endowed in a rare degree with acuteness and a talent for induction, grown up in nature and in constant intercourse with her, he grasps all the phenomena in the province of organic beings, compares those, which had hitherto been overlooked or superficially observed with the greatest ingenuity, draws his conclusions, and lays down principles which are the more valuable because they are purely empirical, and merely repeated after nature."

Hufeland wrote a similar estimate of him in nearly identical terms.

In England Dr. Gall has had few thorough-going disciples ; but of these I may specially mention the late Drs. Engledue and Elliotson, and Mr. H. Atkinson, the authors of *Man's Nature and Development*. The great mass of the phrenologists of the present day are followers of Spurzheim and Combe. As an anatomist, justice has been done to Gall by Mr. Green, Mr. South, and Mr. Solly. On this point his merits

* According to Dr. Fossati, an intimate friend of Gall, the cranioscopic examination of Gall gave the following diagnosis : locality, sense of persons, language, number, order, tune, colour, constructiveness, were all feebly developed ; whilst comparison, causality, individuality, evertuality, and firmness were uncommonly large.

are unquestionable and I need only quote the emphatic words of the last-mentioned distinguished anatomist,* who says :—

“Every honest and erudite anatomist must acknowledge that we are indebted mainly to Gall and Spurzheim for the improvements which have been made in our mode of studying the brain.”

Mr. Solly observes, respecting the physiological pathological aspects of this question, that the brain†—

“Is made up of many instruments, each having its individual function to perform. The symptoms of the disease will, therefore, vary according to the portion which is diseased. It is true that all the ganglia within the skull are so closely united that any single ganglion can scarcely be affected without the rest sympathising. Still inflammation is sometimes restricted and the symptoms peculiar.”

The history of the origin, rise, and decay of phrenology is a subject of not only great interest, but one from which many practical lessons may be learnt. Looking at the question as a whole, I cannot but think that it has deserved its present fate. Much has been said against practical organoscopy, and no doubt a great part of this censure has been well deserved. I know of one remnant of the old Scotch Metaphysical Phrenological School, who has devoted the last forty years of his life to the subject of organology ; and although possessing a skull of considerable circumference, has yet, during the whole of this period, never done anything either to advance our knowledge of the “innate faculties of the human mind,” or to correct any of the aberrations of his predecessors. This is, I believe, not a solitary instance, but one of many of a like character, tending to illustrate the stagnant character of the “doctrine of the mind.” Let us hope that the question of the functions of the brain, in relation to mental phenomena, is now finally emerging both from the theological and metaphysical stages through which it has necessarily had to pass.

I am painfully conscious of the large amount of ignorance and prejudice which exists respecting Gall's theory, partly on account of the odium brought upon it by some of its English disciples.

Much of the prejudice is, however, due to another cause. Gall's theory, if true, unmask all impostors. No man appears to a disciple of Gall other than he is ; and this is utterly repulsive to some men of high scientific and social position.

Having stated this much on the general question of the localisation of the functions of the brain, I shall confine myself, for the present, to the history of the localisation of the faculty of language and speech. The determination of the organ of language by the conforma-

* *The Human Brain*, by Samuel Solly, F.R.S., second edition, 1847, p. x.

† *Loc. cit.*, p. 396.

tion of the eye concerns us here only so far as it was the starting-point from which Gall proceeded. It was the *external* aspect of the eye, its prominence in certain of his schoolfellows, which struck the boy Gall; and it was only at a later period, when reasoning on this fact, and tracing the external sign to an internal cause—the expansion of a certain portion of the brain—that Gall felt induced to place the organ of speech in the anterior lobes.

In all the biographies of Gall, we are told that already when a boy at school he was a keen observer of the differences of talents among his schoolfellows; how he observed that his “ox-eyed” companion, as he called him, invariably beat him in learning lessons by heart; and how, whilst studying medicine at the University of Vienna, he found among the students, professors, and other literary characters of great linguistic attainments, his early impression fully confirmed—namely, that prominent eyes indicate a talent for languages; and how, proceeding step by step, he fancied that he found external marks for each separate talent or propensity, and that he could discern the intellectual and moral character of an individual by his cranial formation.*

As what Gall actually said on the faculty of language and verbal memory has frequently been misrepresented, I shall quote his own words. It will thus be seen that he makes a difference between verbal memory and the faculty of language; but he connects their cerebral organs, and places them both in the frontal convolution, without, however, pointing out their respective limits:—

“I consider as the organ of the memory of words that part of the brain which rests upon the posterior half of the supra-orbital plate. We have not in the engravings indicated by figures the portion in question, as we look upon the sense of words to be only a fragment of the sense of language, of speech.”†

Sense of Language; Talent of Philology.—“When the greatest portion of the middle part of the inferior anterior convolutions placed upon the orbital plate is much developed, this wall is not merely flattened, but even depressed; hence results a peculiar position of the eyes. In such a case the eyes are both prominent and depressed towards the cheeks, so that there is a certain interval between the bulb

* See Huarte, in the preceding article.

† *Sens des mots, sens des noms, mémoire des mots, mémoire verbale.*

“Je regarde comme l'organe de la mémoire des mots, cette partie cérébrale qui repose sur la moitié postérieure de la voûte de l'orbite. Nous n'avons pas donné dans les gravures des chiffres particuliers à la partie dont il est question, parceque nous avons considéré le sens des mots comme n'étant qu'un fragment du sens du langage de parole.”—*Sur les Fonctions du Cerveau, &c.* Par F. J. Gall. Paris: 1825. Tom. v, p. 18.

and the superior arch. The bulb, thus depressed, acts upon the lower arch and increases the curvature. This strong curve produces in the living subject, when the eyelids are open, the appearance of a little sack or pocket filled with water; hence the name 'pocket eyes.'

"Persons who have eyes so formed possess not merely an excellent verbal memory, but they have a peculiar disposition for the study of languages, criticism, in general for everything relating to literature. They write dictionaries, history; they are much adapted to exercise the functions of librarians and conservators; they collect the treasures of all centuries; they compile learned volumes; they fathom antiquity; and if at the same time they are endowed with some other faculties, they gain the admiration of the world for their great erudition."*

Gall does not seem quite clear about persons with prominent eyes having always a good memory. This much, however, he says is certain, that some persons who learn easily by heart may have a bad memory for names; whilst others easily learn names, but cannot recite prose or verses.

Gall also rejects the assumption that thought is impossible without speech. The organs of our faculties, he observes, are alone anterior to the acquisition of speech, and manifest themselves by gestures, sounds, or by both.

If it were true that without signs we could not think, and that only articulate words lead us to abstract ideas, children could not think before they have learned to speak. But experience shows that children have acquired an infinity of notions before speaking.

* *Sens du langage de parole; talent de la philologie*, p. 30.

"Lorsque la plus grande partie de la portion moyenne des circonvolutions inférieures-antérieures placées sur le plancher supérieur de l'orbite ou sur la voûte, est très développée, cette partie est non seulement aplatie, mais même déprimée. Il en résulte une position particulière des yeux. Dans ce cas, les yeux sont à-la-fois à fleur de tête et déprimés vers les joues, de façon qu'il se trouve un certain intervalle entre le bulbe et l'arcade supérieure. Le bulbe ainsi déprimé agit sur l'arcade inférieure et augment l'échancrure. Cette forte échancrure produit chez le sujet vivant, lorsqu'il a les paupières ouvertes, l'apparence d'une petite poche remplie d'eau, de là le nom d'yeux pochetés.

"Les personnes qui ont les yeux ainsi conformés possèdent non-seulement une mémoire de mots excellente, mais elles se sentent une disposition particulière pour l'étude des langues, pour la critique, en général pour tout ce qui a rapport à la littérature. Elles rédigent des dictionnaires, écrivent l'histoire, elles sont très propres aux fonctions de bibliothécaire et de conservateur; elles rassemblent les richesses éparses de tous les siècles; elles compilent de savans volumes; elles approfondissent les antiquités, et pourvu qu'elles aient d'autres facultés encore, elles font l'admiration de tout le monde par leur vaste érudition."

Gall's theory as regards the localisation of the faculty of language in the anterior lobes was not long in finding a skilful advocate.

On the 21st of February, 1825, Dr. Bouillaud read before the *Académie Royale de Médecine* a memoir, entitled *Recherches cliniques propres à démontrer que la perte de la Parole correspond à la lésion des Lobules Antérieurs du Cerveau, et à confirmer l'opinion de M. Gall sur le siège de l'Organe du Langage articulé.** (Clinical researches demonstrating that the loss of speech corresponds with the lesion of the anterior lobes, and confirming the opinion of Gall as regards the seat of articulate speech.)

As this treatise was not only the first written on this subject, but contains the gist of the whole matter, I shall quote from it at some length.

"I don't know how it is," says Dr. Bouillaud, "that it has hitherto not been taught in the schools that the movements of the speech-organs required in the brain a special centre—a truth which appears to me so simple and natural. In order to demonstrate this, we can show by observation that the tongue and its allied organs may be paralysed isolately, and that they may preserve their movements, whilst other parts—the limbs, for instance—are deprived of their motions. This I shall prove first, and then I shall determine the seat of the nervous centre which governs the mechanism of the organs of speech."

Dr. Bouillaud then gives three cases in which there was loss of articulate speech with preservation of the intelligence, as the patients understood everything, and could express their ideas by gestures and writing. In two of these cases the autopsy showed that the anterior lobe of the brain was in one instance reduced to a purulent mass, and in the other the anterior lobe was softened. The third patient recovered.

"It is not sufficient," says this distinguished Pathologist, "to know that there exists in the brain a particular *force* destined to *co-ordinate* the marvellous movements by which man expresses his feelings and communicates his ideas,—it is important to know the seat of this force in the brain. Now, from my own observations, and from those I have collected from other authors, I am of opinion that the nervous principle in question, which may be called the legislating organ of speech (*organe législateur de la parole*), resides in the anterior lobes of the brain."

After illustrating his position by numerous cases, Dr. Bouillaud arrived at the following conclusions:—

1. In man the brain plays an essential rôle in the mechanism of a great number of movements: it governs all that are subject to the dominion of the intelligence and the will.

2. There exist in the brain special organs, each of which has under its dependence special muscular movements.

* This memoir was also published in vol. viii of the *Archives Générales de Médecine*, 1825, from which we quote.

3. The movements of the speech-organs particularly are governed by a special, distinct, and independent cerebral centre.

4. This cerebral centre occupies the anterior lobes.

5. The loss of speech depends sometimes on the loss of verbal memory ; sometimes on that of the muscular movements requisite for speech, or what amounts to the same thing ; sometimes on the lesion of the grey matter ; and sometimes on the lesion of the white substance of the anterior lobes.

6. The loss of speech does not involve the loss of movements of the tongue, considered as an organ of prehension, mastication, and deglutition, nor the loss of taste, which presupposes that the tongue has in the nervous centre three distinct sources of action—an hypothesis, or rather a truth, which admirably accords with the presence of a triple nervous organ in the tissue of the tongue.

7. Several nerves have their origin in the brain itself, or rather are connected with it by anastomotic fibres. The nerves animating the muscles which concur in the production of speech, for instance, take their origin in the anterior lobes, or at least have necessary communications with them.

In 1848, M. Bouillaud read a second memoir before the Academy, entitled, *Nouvelles Recherches*, etc., in which the number of cases in support of his views amounted to many hundreds. He then offered a premium of five hundred francs for any case of loss of speech without lesion of the anterior lobes.

The question of the localisation of the intellectual faculties, and especially of the faculty of speech, made, nevertheless, but little progress until 1861.

In February, 1861, a communication to the Anthropological Society of Paris by Dr. Gratiolet, relative to the signification of the volume of the encephalon, gave rise to long and interesting discussions on the volume and form of the brain, and on the principle of cerebral localisation. Dr. Auburtin, a pupil of M. Bouillaud, chiefly confined himself to the faculty of language, and considered that its seat in the frontal lobes, as sustained by M. Bouillaud, was abundantly proved both by traumatic cases, which may be considered as so many vivisections, and by pathological cases. He knew of no case of the destruction of both frontal lobes and the preservation of speech. He was ready to renounce the doctrine of M. Bouillaud should such a case occur. He alluded to a patient named Bach, in the Hospital for Incurables, who had lost his speech, but preserved his intelligence. This man was dying, and he diagnosed a softening of the anterior lobes ; if these should be found in a condition of integrity, he would give up his opinion. The autopsy of this patient showed a lesion of

the third frontal convolution of the left anterior lobe. Dr. Broca was at that period still sceptical as regards special localisation; for we find him, at the sitting of the Anthropological Society, May 2nd, 1861, thus expressing himself:—

“I have at the last sitting shown you the brain of a man in whom a lesion of the frontal convolutions had abolished speech (the brain of Tan, see cases). It was a curious coincidence that this case occurred at the time when MM. Gratiolet and Auburtin carried on a discussion on the faculty of speech. But although I am rather inclining towards the opinion of M. Auburtin, I had no intention of taking part in the debate. I am neither for nor against special localisations. I merely try to lay down a general principle in considering the convolutions, not separately, but by groups, or, if you like, by regions.”*

From this period Dr. Broca omitted no opportunity of investigating this subject, until he arrived at the conviction that the principle of localising the faculty of speech in the frontal lobes was correct in the main. He went further, and not only placed the faculty of speech in the left hemisphere, but restricted the limits of this faculty to the posterior half of the third left frontal convolution. Thus M. Broca became the chief exponent of the doctrine which now agitates not only Anthropologists but the scientific public generally.

What induced M. Broca to confine the lesion to the left hemisphere, and to the third frontal convolution, had better be stated in his own words used at a sitting of the Paris Anthropological Society, April 2, 1868:—

“I communicated to the Anatomical Society a case of loss of speech, which I call *aphemia*, in which the lesion occupied the third left frontal convolution. Soon after, I dissected an old aphemic subject who, during his life, had only five words at his disposal. We found an old hemorrhagic focus about two centimetres from the posterior extremity of the third left frontal convolution. Since that time M. Charcot had three aphemics whose cerebral lesions were exactly in the same spot. M. Gubler presented a similar case to the Biological Society. But here are two very important cases.—M. Charcot presented to the Biological Society a brain of an aphemic in which, as he stated, the lesion was in the parietal lobe. I confess I was rather startled, but when I dissected the membranes I found that the softening ran along the fissure of Sylvius and reached the third convolution, which is destroyed in its lower half. M. Duchenne (de Boulogne) told me one day that there was a case under Dr. Trousseau, in the *Hôtel Dieu*, opposed to my idea of the seat of articulate speech. I went to the hospital and found indeed the parietal lobe diseased; but on introducing the scalpel into the third convolution I announced that a lesion would be found, and effectually the convolution was found altered to

* *Bulletins de la Société Anthropol. de Paris*, 1861, p. 320.

the extent of three centimetres. Here then are eight cases in which the lesion was in the posterior third of the left frontal convolution, which appear to me sufficient to afford strong presumptive evidence in favour of my theory. I nevertheless await new facts.”*

The most powerful adversary in France of Gall's Organology was unquestionably M. Lelut. In his treatise entitled *Qu'est-ce que la Phrénologie* (Paris, 1836), and in that bearing the title *Rejet de la Phrénologie*, published in 1843, he stigmatises phrenology as a pseudo-science. It is not a little remarkable that in this second work M. Bouillaud's name is not even mentioned. It is the usual, and perhaps commendable, practice to appoint a committee to report on a paper, and to select members holding different opinions on the subject-matter. We are, therefore, not surprised at the election of M. Lelut to serve on that committee, but we agree with him that holding such decided and *unalterable* opinions on the subject in question he ought, perhaps, to have declined the task.

Discussion in the "Imperial Academie de Médecine." Sitting of Dec. 6, 1864.—The Academy having charged MM. Bouillaud, Beclard, and Lelut to report on a treatise, entitled “Observations tending to prove the constant Coincidence of Speech disorders with Lesions of the Left Hemisphere,”† M. Lelut said that he regretted that the Academy had imposed upon him this task, which he ought to have declined. There are many points in physio-psychological science on which he was quite ready to modify his opinion, but there are some points on which his opinions could never be changed or modified. Of these are the relations which it is attempted to establish between certain mental faculties and certain parts of the nervous centre, and amongst these the attribution of the faculty of language to some part of the nervous system. This is neither more nor less than phrenology, and he had paid too much attention to this pseudo-science to recur to it. Such being the case, he would only speak in his own name, leaving it to his colleagues to express their own opinions separately. Dr. Dax, it appears, had collected about one hundred and forty cases, nearly all not of his own experience, in which speech disorders were always found connected with some lesion of the left hemisphere; the lesions of the right hemisphere producing no disorders of this kind. If such a fact were true, then the brain—that mysterious organ—would be still more mysterious. Dr. Lelut concluded by citing what he called

* “Bulletins de la Soc. d'Anthropol.,” tom. iv, p. 202, 1863.

† “Observations tendant à prouver la coïncidence constante des derangements de la parole avec une lésion de l'hémisphère gauche du cerveau,” par Dr. G. Dax. Bulletins de l'Académie Impériale de Médecine,” tom. xxx, Nos. 14 & 15, Avril 15 et Mai 15, 1865.

a very magnificent fact (*bien magnifique*), that of an epileptic in whom the whole left hemisphere was reduced to a pulpy mass, and whose speech was free to the moment of death.

M. Bouillaud, alluding to the "*fait magnifique*" cited by M. Lelut of the reduction of the whole left hemisphere into a pulpy mass, which lesion was not as much as suspected during life, said that such "magnificent facts" were nothing but the negation of all physiological and pathological science. They are open to great doubts, and may be considered as pseudo-facts. He would now, as M. Lelut has done, make his profession of faith in the following terms:—

"My experiments on living animals and my clinical observations have only enabled me formally to pronounce an opinion on two localisations proposed by Gall.

"1. The localisation of the faculty of language and of the faculty of articulate speech in the anterior lobes of the brain.

"2. The localisation of the generative faculty, or of the instinct of generation, in the cerebellum."

He had not only, as Gall has done, studied the purely intellectual element of speech, but also the mechanical element superadded to the former—viz., the movements requisite for articulate speech. After being convinced that the *co-ordinating* or legislating principle (*principe co-ordinateur ou législateur*) of these movements had its seat in the anterior lobes of the brain, he followed up his researches, applying them to the *intellectual element* of speech, and he found that this element also had its seat in the anterior portion of the brain. It was then that in the title of the memoir which he published on the subject in question, he announced that his researches confirmed the doctrine of Gall on the seat of articulate speech and verbal memory.

As regards the second localisation of the instinct of generation in the cerebellum, he had always rejected it, whilst respecting the fundamental principle of the plurality and speciality of the cerebral organs.

Dr. Bouillaud concluded his discourse in the following terms:—

"The simultaneousness of the lesions of the faculty of speech and of reading and writing, which is not uncommon, induces me to think that the seat of the principle of these faculties must be a near neighbour of the faculty of speech.

"It may be said that cases contradictory to ours as regards localisation have been brought forward. No doubt of it; but we have weighed these cases, and we have found that none of them unite the conditions of a *well observed* case.

"For twenty years past we have offered a prize of five hundred francs to the author of a *well conducted* observation of a contradictory kind, but no one has claimed the prize. Let our opponents offer a prize of five hundred francs for a *well conducted* observation of a lesion bearing exclusively on the anterior lobes of the brain, and they will

not have to wait twenty years before there will be many claimants for the prize."

Here it is necessary to observe that Dr. Bouillaud takes his stand on the following propositions—viz., that the act of speaking presents two distinct phenomena—the faculty of creating words, and the power of co-ordinating the movements necessary for articulation. It is this latter faculty which he calls *pouvoir législateur de la parole*, which he places in the anterior lobes of the brain. He says nothing about confining the organ of this faculty to either of the hemispheres, nor to any particular convolution of the frontal lobes. All subsequent efforts, especially those of M. Broca, were chiefly directed to circumscribe and better to define the limits of the cerebral organ of speech.

In the discussion at the Academy, April, 1865, M. Trousseau said :—

"We are not here to discuss either the doctrines of Gall or of Bouillaud, but a Memoir of Dr. G. Dax, son of Dr. Marc Dax, in which he endeavours to prove the constant coincidence of speech disorders and lesion of the left hemisphere.

"What is the symptom or the *ensemble* of symptoms which I call *aphasia*? I shall at once put myself at ease by refusing to give a definition. I know nothing, in fact, more difficult than to give a good definition.

"The aphasic is often paralysed, most frequently on the right side, so that we might believe that gesture and speech are obstructed by paralysis. Nothing of the kind. The man struck with hemiplegia who is not aphasic stutters; but he can still express his thoughts, although in an imperfect manner. He can write and draw, although badly. I call him an aphasic in whom the signs of thought cannot manifest themselves (*celui chez lequel les signes de la pensée ne peuvent plus se manifester*)."

Dr. Trousseau concluded as follows :—

"After what I have stated, it seems to me that we might arrive at the conclusion that aphasia is not a disease, but a symptom; that this symptom results nearly always from the perturbation of the various faculties of the intellect, especially of memory and attention. Numerous well observed cases equally authorise us to conclude that various regions of the encephalon concur to the formation of language, although the anterior lobes of the brain take the greatest part in it."

I have been unable to procure this memoir of Dr. G. Dax which gave rise to the discussion before the Académie. He refers in it to a treatise written by his father, Dr. Marc Dax, of Sommières, and read before the Medical Congress held at Montpellier in the year 1836. The title of the treatise was *Lésions de la moitié gauche de l'encephale, coïncidant avec trouble de la pensée*. In his own memoir Dr. G. Dax sustains not merely that the lesion in the loss of articulate speech is

always in the left hemisphere, but he limits the lesion to the anterior and external portion of the middle lobe, namely to the region adjoining the insula and the posterior part of the third left frontal convolution. In justice to M. Broca, who has been blamed for not mentioning Dr. Marc Dax, who, as asserted by Dr. George Dax, had long ago maintained that the lesions which destroyed the faculty of language had their seat in the left hemisphere, and that a paper to this effect had been read before the Medical Congress, held at Montpellier in 1836, we extract the following passage from Dr. Broca's brochure* :—

"I desire that it may no longer be believed that I sinned either from ignorance or from wilful neglect. The existence of the memoir of M. Dax, senior, was as little known at Montpellier as it was in Paris. After vainly searching the journals of 1836 for some account of this memoir, I requested M. Gordon, the librarian of the Faculty of Montpellier to institute inquiries. M. Gordon was not more fortunate than myself. The congress held its last sittings at Montpellier from July 1 to July 10, 1836. The *Revue de Montpellier* (1836, I, II) gives an abstract of the subjects discussed ; but the question of language is not mentioned. M. Gordon personally inquired of twenty physicians then resident at Montpellier ; but they knew nothing of such a memoir having been read. I will not, however, deny the authenticity of the said memoir ; for it may have been written for the congress, although not read. I merely wish to state that I could not guess the existence of a manuscript which has only been disinterred two years after my first publication on Aphemia."

[To be continued.]

Anthropological News.

IN the course of a few days will be published a work, by Dr. C. M. Ingleby, a gentleman well known for his contributions to Elizabethan criticism, bearing the somewhat indefinite title of *Introduction to Metaphysics* ; it will be sold by Mr. Ayres (the Clerk of the Royal Society of Literature) at No. 4 St. Martin's Place, Charing Cross, in consequence (as we hear) of a disagreement between the author and his publishers. We have seen the table of contents of this work, which are very comprehensive, and of the greatest interest. It is somewhat difficult to state in a few words the exact drift of this book. It is intended to be introductory to a work to be called by the somewhat peculiar name of *Material Logic*. The Introduction comprises a sketch of the principal psychological problems which concern perception through the senses, and the functions of the intellect. Dr. Ingleby grounds himself on Kant, and is evidently so ambitious as to dream of a fresh outcome from the critical philosophy, distinct from those of Fichte and of Hegel. He seems to have carefully criticised the systems of Reid, Berkely, Kant, Hamilton, and J. S.

* "Sur le siège de la Faculté du langage articulé." (Paris, 1865).

Mill. In the first book he utilises the recent discoveries and inventions in optics, especially those relating to binocular vision. The second book appears to contain an exhaustive account of analytical and synthetical judgments, and a thorough investigation of great principles of substance and accident, cause and effect, action and re-action; showing how the laws of nature (as the laws of motion) flow directly from those principles. Dr. Ingleby seems to be aiming at the determination of a great central idea, of which materialism, spiritualism, necessitarianism, and free-will are equally true and, we suppose, also equally untrue. It is plain that if such a work be executed with adequate power and knowledge, it will be a most valuable gathering up into unity of many details of knowledge which have hitherto failed to contribute to the great work of philosophy.

THE NOVA SCOTIAN GIANTESS.—A correspondent had the opportunity of inspecting this remarkably large female during the exhibition at the Egyptian Hall, and forwards the following notes:—The placards at the street corners represent Miss Anna Swan as being 8 feet 11 inches high, and the exhibitor describes her as nearly 8 feet. The observer, who is 5 feet 10½ inches high, stood by her side, when his head reached exactly to the acromion process of her scapula. He estimates her height at about 7 feet 4 or 5 inches, certainly not more. The head, although absolutely large, is relatively to the bulk of the body small. Its contours closely resemble those of the microcephale *Margaretha Maehler*, figured on pl. xix of Carl Vogt's *Mémoire sur les microcephales*, only on a much larger scale. The frontal bone is depressed, and the superciliaries are large. The muzzle is protruding, and under the chin is a large development of adipose tissue, forming a double chin. The hand is spatulous; the fingers short and subequal in length. The mammæ are projecting, and the feet are large. The voice is low, and the gait rickety. The specimen is less interesting than the much larger Chinese giant, Chang, which was exhibited some years ago at the Crystal Palace.

ARCHAIC ANTHROPOLOGY IN IRELAND.—At a meeting in the Museum of the Naturalists' Field Club, Belfast, on the 4th March, a paper was read by J. S. Holden, M.D., F.A.S.L., of Glenarm, on "Archaic Anthropology." He stated that the object of anthropology was not to prove the ape origin of man, as was generally supposed, but to study the natural history of man as he was and as he is. Its present position resembles astronomy and geology in their early days, when they had to battle against popular prejudice and hereditary lines of thought, and like them will triumph. Palæontology has revealed, that the past life on our globe evidences an orderly succession and progression in the arrival of its numerous species, more an ideal than a perfectly continuous lineal series, as many blanks occur in the gallery of nature, "missing links" which may or may not be recovered. Yet there are enough facts to prove the transition from species to species, as the law of the animal kingdom. How does this law operate? is man's legitimate inquiry, and, as no law of nature is revealed, it must be sought for in nature itself; and, just as Kepler pursued the planets through many circles and curves before he discovered their true elliptic orbits, so many theories will be exhausted before the secret law controlling animal series is arrived at. The doctrines of transcendental anatomy first brought forward by Oken and Goethe, that all animals are formed on one great plan, was accepted by Cuvier, and elucidated by Owen, while Darwin, to explain the continuity of the plan, started the bold theory of natural selection. Given unlimited time, the first created animal or prototype, developed into every phase of life, crossed the impass-

able chasm between the vertebrata and invertebrata, and ever evolving upwards, rolled through fish, rodent, and monkey into man. The anthropologist accepts Darwin's facts, but not all his fancies. Man's place in nature, when viewed anatomically, is certainly next door to the anthropoid apes, still we do not fancy the relationship. We claim the Bosjesman, but we repudiate the gorilla. He has not our opposable thumb; his eye-teeth are like tusks, and his brain is not half the size of that of the little Bosjesman. It is quite possible that some thousands of years ago the distance between the lowest man and the highest ape was less than it is now, as forms of both have become extinct. It is a singular fact that the large apes of Asia, as the orang, and the large apes of Africa, as the gorilla and chimpanzee, differ from each other by the same characters which distinguish the men of these two continents, viz., colour and cranium. The orang is brown and round-headed, like the Malay. The gorilla and chimpanzee are black and long-headed, like the Negro; yet it does not follow that Darwinism should come in and allow these apes to climb to the top of our ancestral tree. Referring to the antiquity of man, Dr. Holden said marks of his presence are found prior to the glacial period, as flint implements and weapons in the Upper Pliocene beds, and even some traces have been discovered in the Miocene. During the Quaternary period he was contemporary with the extinct mammoth and cave bear, and has, to our surprise, left us, in the *débris* of caves in France and Belgium, carvings and sketches of the reindeer and other departed animals much superior to the crude designs on Celtic monuments of a vastly later date. Dr. Holden gave a description of the earliest human crania (inferring the savage condition of man in the mammoth and reindeer periods), also of the Danish kitchen middens, tumuli, the Swiss lake dwellings, and the late researches among the long and round barrows of England. In conclusion, he showed that the three great race types of the present day were linked with the distant past. The black, yellow, and white, or Negroid, Turanian, and Caucasian. The Negroid type representing man of the Palæolithic age, distributed over South Africa and parts of Polynesia, at a time when those remote lands formed one continuous tropical continent—if this be so, this primitive type is of an antiquity so vast as to confound calculation. The Turanian—a higher race—probably drove the last to the south, afterwards to be driven itself from Europe to the north and east of Asia. Archaic anthropology, though still in its youth, declares the vast antiquity of man. No more can the age of the human species be numbered by years, unless by years the geological strata and fossil fauna along with which man has left his remains can be reckoned. No more can the dawn of humanity be assumed as a golden age of virtue and intelligence, but as a stone age of barbarism and savagery. Nevertheless, man takes the highest place in the organic series of progression, subject to the inexorable laws of nature. As on the vast ocean of time successive waves of types and species have risen and fallen, have come and gone, so man has appeared, lived, and disappeared; race has followed race, and races, like species, have their day and no more. We see the dark races of the world declining before the exterminating march of civilisation; the Caucasian is now dominant—for how long? Past analogy may indicate the future; and nature seemingly—

“So careful of the type; but no!
 From scarped cliff and quarried stone,
 She cries—‘a thousand types are gone,
 I care for nothing, all shall go.’”

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TREE AND SERPENT WORSHIP IN INDIA.*

THIS great work, brought out under the patronage of our Indian government, in which Mr. Fergusson gives the crowning effort to the labours of his predecessors by restoring as far as possible two very ancient Buddhist topes, a word conveying a similar meaning to our word temples, of India, has an especially anthropological side, which has indeed been brought into view, and even discussed by Mr. Fergusson himself. Indeed it is an essentially anthropological book. Still, there is in it quite sufficient materials for other inquirers, and other views than those advocated by its learned author.

His first attempt is to show that, among primitive superstitions, tree and serpent worship have been very general in all quarters of the globe, almost universal. In this he has fully succeeded. That trees clothed with beauty, and also with mystery, which soar far above the regions to which man can attain, which commune with the heavens, with the spirit of the storm, and are familiar with the lightning's flash, which teem with myriads of virtues, and of beneficent uses to man, should be associated with supernatural notions in his mind, might have been expected, if we had not learned their sacred character in almost every region, in the east as well as the west. The Kirgiss Tartar sees in them an object of adoration, and the native Irish venerate them. It is equally apparent that the mysterious gliding reptile, endowed with such lethal forces as to exercise the power of life and death, was certain to ensure the dread, and attract the devotion of primeval man. In Egypt, in Greece, and in India, serpents have

* *Tree and Serpent Worship: or Illustrations of Mythology and Art in India in the First and Fourth Centuries after Christ. From the Sculptures of the Buddhist Topes at Sanchi and Amravati. Prepared under the authority of the Secretary of State for India in Council. With introductory essays and descriptions of the plates.* By James Fergusson, Esq., F.R.S. London, Indian Museum, 1868.

been objects of worship of one kind or another in all ages. So that Mr. Fergusson has fully made out the position he has maintained in the introductory chapters of this book. The connection with the main subject of the work is not at once seen to be so intimate and so necessary as might have been expected. It is true that we have repeated over and over again in the sculptures of these wonderful structures, the worship of both trees and serpents, as well as that of many other material objects. Mr. Fergusson's opinion is, that tree and serpent worship are the superstitions of a Turanian race, and that they are altogether antagonistic to the tastes and feelings of the Aryans. Hence his pointed allusions to these themes.

The ancient topes of India were sacred structures of a somewhat similar nature in principle to barrows or tumuli, which cover the remains or relics of the dead, and in this way acquire sanctity in the eyes of succeeding generations. They appear to be especially connected with Buddhism. The more celebrated ones are of great magnitude, and have received such accessions and enlargements by the efforts of successive devotees, as to equal, if not exceed, in some respects, the grandest temples of other lands. In this way they became sacred places dedicated to religious purposes, where numerous ceremonies were performed, and where great multitudes of people congregated, devoting their labours and their offerings to adorn and to magnify these topes.

Mr. Fergusson's work is dedicated to the illustration of two of the ancient topes, that of Sanchi and that of Amravati. The former is situated in Central India, to the north of the Vindhya mountains and the river Nerbudda, between the towns of Bhilsa and Bhopal; the latter lower down in the Peninsula, in Guntoor, on the southern bank of the river Kistna, about sixty miles from its mouth. The remains of the Sanchi tope are more entire by far than those of that at Amravati. It is the largest of a series of topes in this neighbourhood, which extends over a district of about seventeen miles in an east and west direction, and ten miles north and south, some of which descend to the size of an ordinary tumulus. But the great one "consists first of a basement of a hundred and twenty-one feet in diameter, and fourteen feet in height. On the top of this is a terrace or procession path, five feet six inches wide, within which the dome or tumulus rises in the form of a truncated hemisphere to a height of thirty-nine feet. This was originally coated with chunam to a thickness of about four inches." Chunam is lime or plaister, and forms upon the tope a coating, something like a coating of bricks. "The most remarkable feature connected with this monument is the rail which surrounds it at a distance of nine feet six inches at the base, except on the south,

where the double flight of steps leading to the berm, or procession-path, reduces the width to six feet four inches. The rail is eleven feet in height, and consisted apparently of a hundred pillars, exclusively of the four gateways, two of which remain, which were added about the Christian era, and are covered with sculptured decorations of the most elaborate kind." (P. 87.) The age of the Sanchi tope itself is considered by Mr. Fergusson to date from the time of Asoka, 250 B. C.

Mr. Fergusson is inclined, upon the discussion of all the evidence that can be obtained upon the date of the Amravati tope, to conclude "that like our own cathedrals, the erection of this tope may have lasted for two or three centuries, or say from 200 to 500 A.D." (p. 162.) This tope is much more thoroughly destroyed than that at Sanchi, so that its remains are now only to be dug out of the mounds on the spot. Its entire diameter was originally about two hundred feet. It was surrounded by two sculptured rails, an inner and an outer one, between which was an elevated procession-path, paved with slabs thirteen feet long, running across the pathway. It seems to have been quite unlike the tope at Sanchi, for the inner rail surrounded an inclosure with buildings upon it, and having in the centre a Dagoba, or tumulus, only about thirty feet in diameter. The procession-path must have been, in its original state, of considerable magnificence. On the outer side it was surrounded with the rail of twelve feet in height; on the inner with one of six feet high, both of which with their pillars were sculptured with innumerable figures, representing a great variety of scenes, probably mainly sacred; but some of them appear to be historical, and others domestic. It is difficult to give an idea of the elaborateness and elegance of the sculptures upon these rails, without an examination of the original marbles, or of Mr. Fergusson's photographs and lithographs. He says, those of the inner rail resemble ivory carvings more than anything else. He observes in one place, "At Amravati there were apparently twenty-four pillars in each quadrant, and eight, at least, in each gateway, say 112 to 120 in all. This involves 230 to 240 central carved discs, all of which were sculptured; and as each of these contains from twenty to thirty figures at least, there must have been in them alone from 6,000 to 7,000 figures. If we add to these the continuous frieze above, and the sculptures above and below the discs on the pillars, there probably were not less than 120 to 140 figures, for each intercolumniation, say 12,000 to 14,000 in all. The inner rail contains probably even a greater number of figures than this, but they are so small as more to resemble ivory carving. Except the great frieze at Nakhon Vat, there is not, perhaps, even in India, and certainly not in any other

part of the world, a storied page of sculpture equal in extent to what this must have been when complete. If not quite it must have been nearly perfect, in all probability less than a century ago." (p. 166.) This may afford some idea of the immense work of destruction done and doing by the great civilised nations of Europe in modern days, and in all parts of the world.

The primary object of Mr. Fergusson's volume is to give the western world some adequate idea of these two ancient Indian topes, and of the profusion of sculptures executed upon their gateways and rails. Many of the marbles are in the Indian Museum in this country, and of others, very careful and accurate drawings have been made at both topes, some years ago, chiefly by two Indian officers, Lieut.-Col. Maisey and Col. Mackenzie. The marbles in London have been photographed with great skill by Mr. W. Griggs, who has besides executed the lithographs, and to him, as well as to Mr. Fergusson, we are much indebted for the proper illustration of these wonderful structures. The latter carefully describes each of the subjects of the plates as they pass in succession before him, and gives the reader the aid of his great knowledge of art in general, and of Indian art in particular, and of his learned researches into Indian history and religion, in explaining the design and purport of the scenes represented in the sculptures.

As already hinted, Mr. Fergusson attributes both these topes, with all their elaborate decorations, to the disciples of Buddha, and of this there cannot be any doubt. They are both of them sacred structures of the Buddhists, whose disciples do not any longer tread the soil of this portion of India, or, indeed, any other portion of India proper. Buddhism was a very ancient religion in India. It may be said without any hesitation that it originated in metaphysical speculations upon matter and upon man, his origin and destiny. It is probable that Brahmanism, the religion of India at this day, is as ancient, if not more ancient, than Buddhism, and it is not so essentially a dissimilar doctrine, at least in its origin, and its philosophy. General Cunningham, a very high authority, speaking of Buddhism, after the days of Sakya Muni, or Gotama, whom some regard as its founder, others as the great reviver and reformer of Buddhism, gives this view of the subject.

"I believe that as Buddhism gradually attained an ascendancy over men's minds, the whole of the Brahmanical school, by an easy change of phraseology, accommodated their own doctrines, so as not to clash with those of the dominant party. At least it is only by a supposition of this kind that I can account for the great similarity which exists between the philosophical systems of Buddhism and those of the Brahmanical Sankhyas. This similarity, which has already

been noticed by Colebrooke, is, indeed, so great as to render it difficult to discriminate the doctrines of the one from those of the other. The phraseology varies, but the ideas are the same; so that there is a distinction, but without a difference.*

The disciples of these two religions, the doctrines of which we will pass over as they are very recondite and complicated, and may be safely said to be differently propounded by different authorities,† have manifested from the earliest period of Indian tradition a great antagonism, which has been displayed in fanatical opposition and strife. Still the similarity of doctrine has been vouched by one of the first of Indian scholars, as we have seen. Mr. Fergusson appears not to take this view. We shall see by-and-by that his hypothesis, as displayed in all parts of this volume, is quite different. He represents the religions as essentially at variance; so much so, that they are the different results or products of two very distinct races of people, whose minds may be said to be constructed upon different, almost opposite, principles, operating upon the grand subject of religion; so that Buddhism and Brahmanism are the effects of two quite distinct causes. Brahmanism he regards from a higher point; probably in its supposed Aryan origin, as a pure and spiritual religion, the religion of the most exalted minds; whilst Buddhism is the religious manifestation of a much lower and baser intellect. In the commendatory tone he maintains towards the former he is much influenced by the ancient Sanskrit poems called Vedas, which are considered to be the oldest and the purest expressions of this faith.‡

* *The Bhilsa Topes; or, Buddhist Monuments of Central India*, p. 38. Lond. 1854.

† Modern Darwinism may clearly claim a Buddhist origin. "The basis of the system is a declaration of the eternity of matter, and its submission at remote intervals to decay and reformation; this and the organisation of animal life are but the *results of spontaneity and procession*"; something like the "continuity" of a modern philosopher, "not the products of will and design, on the part of an all-powerful Creator."—*Ceylon*, by Sir Jas. Emerson Tennant. Third edition, i, 531.

‡ The definiteness, if not the exalted purity, of doctrine of the Vedic poems, may be judged of by the first sentence of Professor Max Müller's "Prospectus of a Translation of portions of the Rig-Veda": "After twenty years spent in collecting and publishing the text of the Rig-Veda with the voluminous Commentary of Sâyana, I intend to lay before the public my translation of some of the hymns contained in that collection of primeval poetry. I cannot promise a translation of all the hymns, for the simple reason that, notwithstanding Sâyana's *traditional explanation of every word*, and in spite of every effort to decipher the original text, either by an inter-comparison of all passages in which the same word occurs, or by etymological analysis, or by consulting the vocabulary and grammar of cognate languages, there remain large portions of the Rig-Veda, which, as yet, yield *no intelligible sense*."

But it will be better to state Mr. Fergusson's views as far as we can in his own words. Mr. Fergusson tells us that the hardy and warlike Aryans, or Sanskrit-speaking race of people, derived from the countries now known as Bokhara and Afghanistan, entered India across the Upper Indus—there seems no good reason for doubting that it was at or near Attock—and eventually spread themselves throughout the whole of the valley of the Ganges and the countries between the Vindhya and the Himalaya mountains. That, at intervals of from five to ten centuries, horde after horde of these Aryans have crossed the Indus and settled in the fertile plains of India. Another race,—

“A Turanian race, known as the Dravidians, and speaking Tamul, or languages closely allied to it, entered India probably earlier than the Aryans, but across the Lower Indus, and now occupy the whole of the southern part of the peninsula nearly up to the Vindhya mountains. . . . It is not quite so clear whether there was not a third race occupying the countries north of the Vindhya and between them and the Himalayas, of which they were dispossessed by the Aryans. The language of the superior race has so completely taken possession of every department of literature at the earliest period to which our knowledge extends, that we have no written record of the existence of this aboriginal people ; and the blood of all has in modern times been so mixed by migration and colonisation, that it seems impossible to dig back to the roots through the jumble of languages and races that now exist in the valley.” (P. 57).

There are few passages in which Mr. Fergusson explains his views on the subject of the races of India and other parts of the world more fully than that in which he speaks of the legendary tales collected by the brothers Grimm, concerning serpents, dwarfs, giants, and other monsters of fairy stories, which have had such an extensive prevalence over Germany, Scandinavia, and anciently Greece ; still, no doubt, with great variations. He says,—

“The usual mode of accounting for this identity, which can hardly be accidental, is to *assume* that the tales were originally invented by Aryan nurses beside the cradles of the race in Balkh and Bokhara, and that they were carried east and west by the alumni when they set out on their travels some four or five thousand years ago. The results of my reading have led me to conclusions widely different from this fashionable hypothesis. My belief is that all the serpents and dragons, all the dwarfs and magicians of these tales, all the fairy mythology, in fact, of the east and west, belong to the Turanian races. These, as I have frequently had occasion to mention, underlie the Aryan races everywhere in Europe as in Asia, and occasionally crop up here and there through the upper crust, often when least expected. So far as I understand the idiosyncrasy of the two races, nothing can be more antagonistic to the tastes and feelings of the Aryans than these wild imaginings ; while few things, on the contrary, could be more con-

genial to the comparatively infantile intellect of the Turanian race." (P. 73).

This view it may be safely said is an advance upon the "fashionable hypothesis," which is at the same time highly improbable, although it is by no means a relinquishment of the extravagance of deriving the Aryans from the east to come into Europe, to establish civilisation and the nations of Europe. This Mr. Fergusson appears still to suppose to be true.

Taking the author's statement literally, it is the Turanian immigrants who occupied the country of the Dravidians. Hence we should anticipate that this region would be the special seat of Buddhist remains, as Buddhism was especially the Turanian religion. But such is not the fact. Amravati is situated nearly on the border of this region, and "though there were Buddhists in Dravida-desa, there are no traces of Buddhist buildings or establishments now to be found south of Amravati." (P. 58). And Mr. Fergusson says distinctly that it does not appear that the Dravidian races ever were converted to Buddhism.

We appear thus to be thrown entirely upon the people who occupied Central India and the Valley of the Ganges, before the presumed immigration of the Aryans for the origin of Buddhism. In one place Mr. Fergusson says expressly, "the province now known as Upper Bengal, more especially the districts of Tirhoot and Behar, were assuredly the cradle of Buddhism." (P. 225). These people the author would have us to recognise as Turanians, or, what other ethnographers name, aborigines. And here we hope to be excused for saying, this seems to be a weak point in Mr. Fergusson's hypothesis. He assuredly would not put back the origin of Buddhism to a period anterior to the earliest invasion of the Aryans; indeed, on the contrary, in some passages he appears to regard Sakya Muni (623-543 B.C.) as the founder of this religion. But, if we err in taking these expressions too literally, as is very probable, we are still justified in saying, he assuredly would not put back the origin of Buddhism to a period anterior to the earliest invasion and settlement of the Aryans in this portion of India. Hence we must be reduced to the necessity of assuming that this peculiarly Turanian religion took its rise among a Turanian race, which had been invaded and conquered by Aryans and had mingled with Aryans for ages before this origin. A Turanian race thoroughly subdued by the hardy and warlike Aryans, or Sanskrit-speaking race, "to whom is to be attributed that language which has so completely taken possession of every department of literature at the earliest period to which our knowledge extends."

Our author ascribes great importance to a mixture of blood, and

explains this singular phenomenon by such a mixture. He says, after making use of the term *Hindus*—"meaning by that term the civilised race who had been the dominant class in India for at least two thousand years before the time to which we are now referring. Originally these people were no doubt pure immigrant Aryans; but, before Sakya Muni preached his reform, their blood had become so mixed with that of the aboriginal and inferior races, *as to render the success of that new gospel possible*. They still, however, retained the civilisation and the pre-eminence which the original intellectual superiority of the Aryans had imparted to them." (P. 92.) This is as if we were to attribute a great religious reform in France at the present day, not to the Frankish blood which exists in that country, but to the Celtic blood, on the ground that we thought the new religion was essentially a Celtic faith, perhaps something like Druidism.

It should also be recollected that Mr. Fergusson admits that Sakya Muni himself was an Aryan, and yet he preached a religion so repugnant to Aryans, that our author says, "it may be safely asserted that no Aryan race, while existing in anything like purity, was ever converted to Buddhism, or could permanently adopt its doctrines." (P. 57.)

Mr. Fergusson's work is of great interest in relation to serpent worship, or the manifestation of religious veneration towards serpents. He has striven to show that this kind of religious sentiment has prevailed in almost all countries. In India it is met with at the remotest period to which we can refer, and it exists now. It seems to us, as already explained, to be an expression of a blind sentiment towards the supernatural implanted in the mind of primeval man. In India it has always played an important and extended part in mythology, under the name of "*Naga*," the Sanskrit term for serpent. In the ancient poems there are endless fables about a naga race of people, and they constantly recognise naga royal families, as well as an infinitude of other absurdities. Mr. Fergusson considers that there is an intimate relation between this naga race, and also serpent worship itself, with the Turanian people. Besides the use of the term in the sense of a snake, it is also applied to some of the wild or aboriginal tribes of India, in the northern parts of Asam. These are not known to be devoted to serpent-worship; but it will be readily seen how the fables of the Indian poems may have had their origin in the hill tribes. Mr. Fergusson, as just mentioned, is much disposed to consider serpent-worship, wherever it exists, as a mark of a Turanian race. It may be doubtful whether these Buddhist sculptures carry out this view. He uses the term Turanian in such a comprehensive manner, as already hinted, that it has the meaning of an aboriginal race. He thus expresses his views upon this subject.

“If there is one point which comes out more clearly than another in the course of this investigation, it is that serpent worship is essentially that of a Turanian, or at least of a non-Aryan people. In the present state of the inquiry it would be too bold a generalisation to assert that all Turanian races were serpent worshippers; and still less can it be affirmed that all who looked on the serpent as a God belonged to that family of mankind. It is safer, however, to assume that the whole tendency of the facts hitherto brought to light, lies in that direction; and it seems probable that eventually the worship of the serpent may become a valuable ethnographic test of the presence of Turanian blood in the veins of any people among whom it is found to prevail.” (P. 40.)

When we come to examine the sculptures themselves, which are well represented in the plates, we find, apparently, judging chiefly from the dress and other peculiarities, different tribes, or races of people. Mr. Fergusson has directed his attention to the interpretation of these, but they will probably admit of much further study. He considers that the people represented may be divided into two classes. The first he designates “Hindoo,” or the original Aryan race, who had been the dominant class in India for at least two thousand years before the erection of the Sanchi Tope, during which time they had mixed their blood with the aboriginal and inferior races. These are generally distinguishable by their costume, which is the *dhoti*, i. e., a scarf wound round the loins, and then brought up between the legs and thrust under the folds which cross behind, or sometimes before. This is the manner in which the *dhoti* is worn at the present day. The turban covers the head. Sometimes they have a cloth passed over the shoulders and obliquely across the back, which Mr. Fergusson calls by the modern name Chudder. This costume is pretty much the same as that of the present inhabitants of India, not Mahomedans, which is distinguishable by not being shaped, not being needle-made, but worn as woven by the loom.

For ornaments both men and women wear bangles round the wrists and round the ankles, and have a large ear-ornament, which is a thick object thrust through the lobe of the ear, the women having besides heavy bead necklaces. What is most remarkable in these women, is the exceeding scantiness of their dress. With a large bordered head-dress, hanging half way, and, in some cases, all the way down the back, the ear-ornaments and bangles above-mentioned, and a highly ornamental girdle, passing low down around the hips, they are many of them fully clothed. This nude condition is not universal, although very general, as a few wear *dhotis*.

In many of the photographs, particularly of those from the Amravati tope, we see people with handsome features, mostly of a heavy

cast, some of them with pleasing countenances, with good noses, people who greatly resemble the Hindoos of the present day. There is much room for anthropological purposes, for a series of careful photographs of the most characteristic heads, of a good size, taken from the marbles, so as to afford studies of the people represented in the sculptures. All the photographic delineations in this volume have been taken as it were for architectural purposes, or at most for art purposes. The marbles should be studied more minutely for ethnological purposes. And it would be a very proper and also desirable thing if a few of such photographs as have been suggested of the ancient inhabitants of India, were added to the great work now issuing by the Indian government, under the title of "*The People of India*."

But the photographs of this volume, the lithographs not possessing the same physiognomical value, which are mostly small, as far as the portraits of the people are concerned, may, like those of the Egyptian and Assyrian monuments, be quoted in proof of the permanency of race. All careful observers have concurred in the opinion, that the people represented in the sculptures and paintings of the Egyptian tombs are the same race as the people who inhabit the Nile valley at the present day. Those remarkably fine people of the most ancient civilisation on the face of the globe, who in a recent ethnological concatenation have been identified with the most uncivilised and most uncivilisable race of which we know anything in any period of the world's history, have left their lineal and unmistakable descendants among the subjects of the present Pasha. And it is the same with the Assyrian monuments, which depict a people quite contrasted with the ancient Egyptians. Those who have studied them in juxtaposition with the present inhabitants of the valley of the Euphrates, tell us that there exists the greatest resemblance between the two. Here in India we have the same phenomenon, the Hindoos of the present day being sculptured in the marbles of the topes dating from the period of the Christian era. These are all striking evidences of the same law of permanence of type. Whether the resemblance of the Hindoos of that remote period with the Hindoos of to-day, will afford any support, or otherwise, to the Aryan hypothesis, we will not say. For it does not appear that by going back from the present time, when the philologers consider themselves under the necessity of supposing an Aryan origin for the Hindoos, for nearly two thousand years, we meet with any proof of arriving nearer to an epoch when the supposition was not equally needed upon the same grounds. This, we are fully aware, is no difficulty in the way of those who maintain the Aryan hypothesis; for they tell us that at

least five thousand years ago the Aryans descended from Bokhara and Afghanistan to the Gangetic valley, and brought Sanskrit with them. Still, it cannot be denied that the appearances are all in favour of the endurance of the same race of people in India from the remotest times to the present. If there have been any great changes, which we are required to suppose even by Mr. Fergusson, there is no evidence of subsequent change from the time of the building of the Sanchi tope to this day.

The other, or second great class of people of the sculptures distinguished by Mr. Fergusson, have a different costume. They are clothed in a kilt, fastened round the loins by a cord, a cloak, or tippet, and something like a conical cap, which Mr. Fergusson considers to be either their plaited hair, or a piece of cloth or rope wound round the head in this conical shape. But their most remarkable peculiarity is that they wear beards of a peaked shape, whereas all those of the first class are devoid of beards and even moustaches. Their garments are shaped and made with a needle, not like those of the first class, which are worn just as they came from the loom. Mr. Fergusson is unwilling to affix any general name to the people of this second class, still he calls them "Dasyns," for this term, he says, has been given in the Vedas to the aboriginal people of India. He regards this second class as being the ancient representatives of the wild tribes of India, such as the Gonds, the Khonds, etc., of the present day. Their women also are readily distinguishable from those of the "Hindoo" race. They wear a petticoat striped like the kilts of the men, which appears to be gathered in at the knees, and a cloak or tippet is thrown over one shoulder. Although our author is disposed to regard this really better clad people as the aborigines of India, and as the inferior race, among whom the "Hindoo" people, having some tinge of Aryan blood in their veins, stand out as their superiors, it should be noted that this was not the opinion of his predecessors in this inquiry. General Cunningham and Colonel Maisey were inclined to regard this second class as priests or ascetics, *i. e.*, really a class superior in the eyes of the general population. Notwithstanding these difficulties, it must be admitted that Mr. Fergusson's opinion, the result of great research, must always have considerable weight.

There does not appear to be that distinction among the worshippers, or in the objects of their worship, which we might have expected or desired. Whether this may arise from the unsectarian, tolerant spirit of Buddhism is doubtful. But in the case of Plate lxx, which represents one of the pillars of the great rail at Amravati, we have in the centre the bearded people, who are there, wearing a breech-cloth and a close cap, worshipping a Buddhist emblem, the trisul; in the

compartment on the left hand, the same people also seated worshipping the serpent emblem, or five-headed naga, to which are actually attached the sacred feet of Buddha; and, in the compartment on the right hand, we have a group of lamas, or Buddhist priests, fully clothed in flowing robes, no doubt of yellow silk, as they have come down to the present day, with shaven heads, worshipping the trisul on a pillar, to the base of which the sacred feet are equally attached. In the seventy-first plate we have, in figure 1, the beardless and turbaned people, with their women, engaged in worship on one side of a pillar bearing the trisul, and having the sacred feet, and, on the other side, the lamas worshipping the same emblems.

This confusion of people and of objects of worship is most embarrassing in different ways, for it shows that there was no repugnance on the part of the worshippers, whether Hindoos or aborigines, to the worship of the serpent or of Buddha, that confusion was the rule in every respect, although the artist adhered to the delineation of each people and sect, if the term may be used, in their proper costume. Still it is remarkable that they are generally represented in separate compartments; for instance, the lamas are not mixed with the other people, but stand or sit by themselves.

There is a hopeful expression of Mr. Fergusson's which must excite interest with anthropologists, where he says:

"We are very far indeed from any such knowledge of the modes of sepulture among the aborigines, as to be able to speak regarding them with anything like certainty. Ample materials, however, exist in India, and so soon as any one will take the trouble to collect and classify them, we shall from their graves be able to discriminate between the different races, and assign to each its proper locality, with a precision now entirely wanting to such researches." (P. 152.)

In the photograph, Fig. 4 of Plate xci, which is, according to Mr. Fergusson, the representation of Suddhodana, the father of Buddha, and his friends, a subject very similar in this religion to the annunciation of Christian artists, there is an appearance in the four men who are seated upon stools around the prince, which is not commented upon by the author. All these four persons have their right hands raised, the two first fingers extended, and the others closed, which reminds us of the sign used by Christian priests in "blessing," as it is called. In Plate lxxiv, Suddhodana is seated, with a halo round his head, holding up his right hand; the forefinger and thumb are joined, and the rest of the fingers held upright,—no doubt, another sign.

When speaking of the worship of the horse in one place, for this animal is introduced as sacred in the sculptures, the author evidently makes some acknowledgment of Aryan difficulties. He says:

"This does not preclude the idea of this form of worship being

borrowed from Scythia. On the contrary, everything we learn from either Sanchi or Amravati points to the north-west, and to countries beyond the Indus as the source whence everything took its origin. What the Buddhists derived from those countries was, however, directly antagonistic to anything which we know that the Aryans either possessed or affected, and must consequently be derived from some other race." (P. 216.)

Another singular anomaly in the views of Mr. Fergusson ought not to be passed over, especially as it is almost a postulate with our author that the Aryans are not an architectural race; at first view, an extraordinary position, when it is usually affirmed that the Greeks were primarily Aryans. He says, that the Turanians are the great builders everywhere. In fact, he accounts not only for the temples but for the religion also of the Greeks from the prevalence of Turanian blood in Greece. This may seem to be a necessity if the Aryan hypothesis is to be upheld.

"Assuming the Veda and Zend Avesta to be exponents of the religious feelings of the Aryans, it is impossible to understand—if language is any test in such a matter—how a people speaking a tongue so purely Aryan as the Greek, could so completely have lapsed into a Turanian ancestral worship as we find that of Greece in its great age. Unless a great substratum of the inhabitants of Greece belonged to the Turanian family, their religion, like their language, ought to have presented a much closer affinity to the earlier scriptures of the Aryan race than we find to be the case. The curious anthropic mythology of the Grecian Pantheon seems only explicable on the assumption of a potential Turanian element in the population, though the study of the language fails to reveal to us its existence." (P. 12.)

In other words, language is the true and only basis of the Aryan hypothesis; but the facts relating to religion require the admission of a non-Aryan race of people in Greece. On turning to language to support this admission, it at once becomes valueless as a test of the existence of this non-Aryan race.

One of the most important principles laid down by our author, upon which Mr. Fergusson's opinion as an artist and architect has the greatest weight, is that which he everywhere expresses upon the influence of Bactrian art as seen in the most ancient monuments of India. He is inclined to consider that this influence is displayed in the purest form in the time of Asoka, 250 B. C., to which he refers the Sanchi Tope. He says:

"We can now assert with confidence that all the permanent forms of art arose in India after its inhabitants were brought into contact with western civilisation, by the establishment of the Grecian kingdom of Bactria. It seems probable that such sculptures as we have of Asoka's reign were actually executed by Grecian, or at least by Yavana artists." (P. 221.)

An earlier passage to the same effect, which is also connected with

one of Mr. Fergusson's ethnological hypotheses, may possibly serve to explain this latter term.

"The knowledge that we have now gained of the early history of the art of sculpture in India, from the study of the examples at Sanchi and Amravati, enables us to point with equal certainty to Bactria as the fountain-head from which it was introduced. . . . We are now able to trace the Yavanas step by step, as they penetrated over the Upper Indus, and spread their influence and their arts across the continent of India to the very shores of the Bay of Bengal, at Cuttack, and Amravati. . . . But the people who did all this were not Greeks themselves, and did not carry with them the Pantheon of Greece or Rome, or the tenets of Christianity. They were a people of Turanian race, and the form of worship they took with them and introduced everywhere was that of trees and serpents, fading afterwards into a modified form of Buddhism." (P. 98).*

This, upon the origin of Indian art, is very significant testimony when derived from such a source. The taste of that great people, led by Alexander to his eastern conquests, confessedly laid the foundations of Indian art as we see it in all subsequent ages, and we know nothing of Indian art before that epoch. This is a very important foundation should the scholars of a future period be led to inquire, what was the full extent of Grecian influence upon the oriental world in other matters, especially language.

* To this passage of our author a little more attention, of an ethnological kind, ought to be directed. The Aryan system, it is well known, is a system of inferences from beginning to end; still it may be questioned whether this practice of inferring race after race, which is Mr. Fergusson's method, should not be under some restraint. Here we have him inferring the invasion of India by a Turanian race across the Upper Indus, we might reasonably suppose, after the foundations of the Bactrian province, as they appear to have brought Greek art with them. We do not wish to insist upon the interpretation of Mr. Fergusson's language too literally, and allow that he may mean that his inferred Yavana Turanians crossed the Upper Indus long before Alexander's invasion. What we especially wish to call attention to is the fact that our author in all other parts of his work regards these invasions across the Upper Indus as the work of the hardy and warlike Aryans. Here he is constrained to infer an invasion of Turanians from the same source too.

QUATREFAGES ON THE PROGRESS OF ANTHROPOLOGY.*

HOWEVER well founded on reason any science may be, it is necessary not only that its truth be demonstrable, but that the reasons on which it is established be made known to the reading public,—to those who are disposed to inquire fairly and dispassionately into the reality of its pretensions,—ere it can be expected to command the assent, or obtain the study of the generality of mankind. And however extensive or however satisfactory may be the data from which the principles of any science are derived, until they are collected and systematically arranged so as to arrest the attention of those who are inclined to engage themselves in abstruse studies, the science itself can hardly be expected to make much way in the learned world. To Professor de Quatrefages, both the science of Anthropology and the learned world in general, are deeply indebted for his invaluable papers in the production of the work before us, which reduces to a complete and intelligible system the abstruse and difficult, and to many the incomprehensible, science of anthropology, embracing, during his investigations, a wide range of topics, and arranging disjointed facts in due order, so as at once to evince their bearing upon the subject. His disquisitions are always able, and his reasonings sound; and although we cannot pledge ourselves to adopt every conclusion at which he arrives, we are delighted to accompany, in the pursuit of this or any other science, so enlightened, so earnest, and so dispassionate an inquirer after truth. Indeed, every student of philosophy, more especially of the highest branch of it, the philosophy of man, must join in a tribute of gratitude to the individual whose ability, whose bearing, and whose energy have been devoted to the production of the very valuable, interesting, and important work, the contents of which we are desirous of bringing before the English public.

Our author, at the commencement of his work, proceeds to the definition of the science of Anthropology, as "The History of Mankind considered from a specific point of view," *Introd.*, p. 1. This definition may not be considered by some to be in itself very determinate or very satisfactory; but our author's meaning is more precisely evinced as he proceeds. He subsequently goes on to expatiate on the vastness of the science, as embracing the various human groups; and remarks (p. 3) that, in treating on them, the anthropologist is

* *Rapport sur le Progrès de l'Anthropologie.* Par M. A. de Quatrefages, Membre de l'Institut, Professeur au Muséum. Publication faite sous les auspices du Ministre de l'Instruction Publique. Paris, 1867.

not occupied only by mere physical, but that the intellectual and moral part of his nature equally demand our attention. He inquires, with great justice, at p. 5, "if the study of a plant or of an animal has merited the honourable name of *science*, how can we refuse it to the study of man?" Even in the study of bodies, "according to M. Chevreul, it is necessary to study three groups of properties,—the property physical, the property chemical, and the property organic" (p. 6). "Consequently, Anthropology, which I have already defined, constitutes a special science in every acceptation of the word" (p. 6.)

The first part of the book, which is devoted to an historical survey of the science, commences with (Ap. 1) the first period, extending, since Buffon, until the works of the Ethnographical Society (p. 9). What appears to us to be a somewhat inconvenient plan, has been adopted in placing the table of contents at the end of the work instead of at the beginning, where it would be most useful for reference. There is also a great want of an index to a voluminous and important work of this nature, containing such a vast amount of matter, and in which the different points of consequence, requiring to be referred to, are scattered about throughout the volume. Indeed, of all works, this one seems specially to require an index, as not only useful but indispensable. We venture to hope that both suggestions may be made use of, not only in the future editions in French, through which, we trust, the work is destined to pass: but also in the English edition of it, which we hope to see published shortly, which the work in every way deserves, and which, we feel certain, will be most welcome to a large and intelligent class of English readers.

In the first chapter, our author proceeds to take a survey of the opinions of Buffon, and other high authorities. He here remarks, with equal force and truth, that "when two men arrive at identical conclusions, by ways as different as the linguistic and that of physical examination, one is able to accept their assertions; there is every chance of their being true. Their discordance intimates at once where there are special difficulties, or whatever error has been committed on the part of either, it gives birth to reasonable doubts, and excites new researches,—it is, with them, a means to attain the truth" (p. 16). Buffon, Blumenbach, and certain linguists whom he mentions, he pronounces to be the founders of the science of Anthropology. He places a high value, also, on the works of Dr. J. C. Prichard, who, he says, is essentially of the school of Buffon.

In this part of his work, Prof. de Quatrefages speaks strongly as to the value of the information which anthropology has obtained through the efforts of missionaries, to whose proceedings anthropo-

logists have been thought by some persons, although very erroneously, to be opposed ; while, on the other hand, missionaries have acted very unwisely in not availing themselves of the information, and that of the most reliable and practical kind, obtained respecting the people with whom they desire to hold intercourse, and the best means of doing so, supplied by anthropologists. Our author observes, respecting missionaries in general, that "the missionaries have always followed closely upon travellers, whether geographic or naturalists. Several times they have even preceded them. In the pursuit of their habitual occupations they have often studied men more thoroughly than the most eminent lay travellers. Anthropology owes them much. Whether catholics or protestants, orthodox or dissenters, they appear occasionally to have exerted an energy which has done great service to science. . . . It is mainly to missionaries that we are indebted "for our knowledge of many parts of the world" (p. 25).

And, again, in a subsequent part of his work, he tells us that "the missionaries of all communions have most frequently opened the way to geographic discoveries ; and, thanks to their habitual occupations, they have collected on the subject of man many observations which the most eminent lay travellers neglected to make. More than one of them has lately rendered his tribute to science by important publications" (p. 41).

The history of the science of anthropology is followed up in the second chapter of this work, "comprising the last twenty years." He here remarks passingly, with equal force and truth, that among travellers "it too frequently happens that they inquire more about a country than its inhabitants, and describe more minutely the mammiferous animals or the birds than they do men. If they are occupied with him, they describe his habitation, his clothes, and his articles of dress, without saying anything about his actual character. This is no less the case, even in our day" (p. 36).

This is, doubtless, more the case with modern travellers than with those of ages gone by. Captain Cook, for instance, enters much more into the character, intellectual and moral, of the natives of distant lands, not before visited, with whom he came in contact, than most if any recent writers have been in the habit of doing. The missionaries have done some service in this respect, but not to the extent which might have been reasonably and fairly expected, considering how directly the nature of their occupation led them to observe minutely and in various ways the character and habits of those with whom they have had to deal.

In the present chapter Professor de Quatrefages gives a summary of works indispensable to the anthropologist, which develope the leading

principles of the science, and which were all of them produced during the present century. We have been rather led to regret, in connection with this part of the subject, that the present treatise has not embraced a review of the productions of the older writers on subjects connected with anthropology, long before it was formed into, or attempted to be classed as a separate science, many of whose investigations and observations are of the deepest interest and the highest value. Indeed, the study of anthropology is, in reality, as old as the days of Aristotle, certain of whose works, as also many of those of Plato, are of great value to anthropologists, although anthropology was not then recognised as an independent pursuit. From his days to our own, all the profoundest philosophical writers have treated more or less on anthropology, especially the writers of the middle ages, to several of whose works allusion has lately been made in this *Review*.* Sir Matthew Hale's great work on "The Primitive Origination of Mankind, considered and examined according to the light of nature," is devoted to the examination of subjects, such as the unity of the species, which have peculiarly of late years occupied the attention of anthropologists. Jacob Behmen, too, whom even Newton delighted to consult, must not be overlooked here. Among writers of this class, however, Des Cartes† and Malebranche deserve especially to be mentioned, as also our own writers Hobbes and Locke. In conjunction with the efforts of travellers and naturalists, the observations upon man in general, more especially as regards his intellectual and moral nature, form a mine of wealth to the anthropologist, which has yet to be explored, and to be worked as well. Among the French writers the President Montesquieu, and of his works his "Spirit of Laws," deserve especial notice. All his legal principles may be said to be based on anthropology, which is, indeed, more or less the case with the greatest and most profound jurisprudential writers, especially Puffendorf and Burlamaqui, thereby at once affording direct proof of the practical value of anthropology to legislators and jurists.

The second section of the chapter now before us contains an account of the formation of different anthropological societies. Speaking of the constitution of that at Paris, he observes :—

* Nos. 23, 24, 25, *On the Localisation of the Functions of the Brain*, etc.

† During a recent visit to Paris, we paid a visit to the church of St. Germain des Prés, the resting-place of the remains of Des Cartes, which is situated near the Institut; and learned with equal surprise and regret that no memorial of any kind whatever—not even a common slab-stone—has been placed to mark the spot where the ashes of this very great and original genius, who has done so much for philosophy in France, are laid. Surely, the Institut ought to do something to rescue from neglect so noble an ornament to the rank of philosophers in their enlightened country.

"Composed at first almost exclusively of medical men and naturalists, it has attracted to its ranks a very large number of travellers, linguists, historians, geographers, and archaeologists. If it has to complain of anything, it is that the men who cultivate these different sciences have not replied in sufficiently great numbers to its appeal ; for the more it advances the more it perceives that to study the science thoroughly a man requires to know everything" (p. 46).

Among the societies out of France, he alludes to those of London and Manchester, as also to that at Madrid, which has been for some time nearly defunct, owing to the jealousy and arbitrary interference of the then ruling powers ; while those ruling powers, in their turn, have shared the same fate, and have now as little influence over Spain as is possessed by the Madrid Anthropological Society.—*Sic transit gloria mundi.*

As regards the mode of studying men, our author remarks truly and philosophically:—"Man, as a problem not being understood, and consequently not being able to render us any solution of it, it becomes necessary to inquire among the plants and animals, to investigate the general laws common to all living beings, and to employ them in the solution of the question" (p. 60). This is an enlarged and comprehensive, as well as truly philosophical mode of following up the study of anthropology ; but an important light may be thrown on the nature of man by the observation, not only of beasts and birds, but also of fishes and reptiles, and even of insects and vegetables. The question as to the influence of difference of sex in our own species may obtain extensive elucidation from the observation both of plants and insects. The habits of beasts and of birds will serve also to illustrate many perplexing mooted questions in morals.

In the opening chapter of the second part of this treatise, "man's place among living beings" is discussed at large. It is here remarked that—"In reality man is the only being in whom one meets with the following essential characteristics : 1, the notion of moral good and evil ; 2, the belief in another life ; 3, the belief in beings who are superior to him" (p. 76). On the latter point he, however, subsequently remarks that "in this respect domestic animals are religious, for they readily obey those who influence them with the rod and with sugar" (p. 85). They also render homage to a superior being in the case of man. Indeed, he afterwards observes that "there is no difference between the Negro who worships a dangerous animal, and the dog who crouches at his master's feet to obtain pardon for a fault" (p. 86). And, as he also remarks in another part, "animals fly to man for protection, as a believing being does to his God" (p. 87).

Chapter ii is devoted to the much vexed question, even among anthropologists, of "the unity of the human species." He here re-

marks that "in France, as in other countries, anthropologists are divided into two parties upon a question essentially fundamental, for upon the solution of it arrived at depends very often the mode in which all the others are to be dealt with" (p. 94). He here, however, assumes, somewhat unfairly and unreasonably, as it appears to us, that the dogma of the unity of the species has the direct and positive support of the Bible, the incorrectness of which was pointed out in an article in this *Review** by one of our contributors some time ago, and into which it is, therefore, unnecessary here to enter. Professor de Quatrefages consequently speaks very incorrectly, of the unity of the species as "a dogma supported on the authority of a book which Christians, Jews, and Mussulmans almost equally respect" (p. 95), and as having been for a long time received without dispute; of which, too, as has been several times shewn, there is at least very great doubt. He then proceeds to observe,—“Peyrere, supported principally by the first chapters of Genesis, endeavours to demonstrate that Adam and Eve were the ancestors only of the Jewish nation; that they had been preceded by other men; that the Preadamites, ancestors of all the Gentiles, were created at the same time with the animals, and upon all parts of the habitable world” (p. 95). After that he goes on at considerable length to contend for the monogeneity of our race, although he is liberal enough to remark that “the polygenists are too often accused of impiety. One forgets that the same reproach has been cast upon many other doctrines which are at this day admitted by the firmest believers” (p. 96). He subsequently refers (p. 100) to animals and plants in order to solve the problem. And he afterwards observes, that while “there is a unity of species, the different races are fractions of the unity; or, again, the species is the trunk of the tree, while the races represent the principal branches, the boughs, and the twigs” (pp. 106, 107). In another part he asserts that “a rigorous comparison places it beyond doubt that with man the limits of variation of character are in all respects less extensive than with certain races of animals of one particular kind” (p. 110). And he subsequently informs us that “at the end of so many generations one is obliged entirely to recommence the series of crossings, because the products return to the primitive species, as is the case with vegetables” (p. 122).

“The formation of vegetable and animal races; hereditary and medium (*milieu*); applications to man;” is the title of chapter iii. He remarks here that “man does not himself exercise the selection which he employs in the case of the domestic species; and this explains in part how it is that we have found in his case that the limits of variety are always more restrained than they are with animals. . . .

* Vide *Anthrop. Review* for April, 1867, No. 17, p. 175.

It is not, therefore, surprising that there is nothing between man and man of the distance which separates so many of the races of the animal world" (pp. 139, 140). In another part he inquires—"What is degenerating, unless it be the transformation of one race into another?" (p. 141). In a subsequent page he thus defines the somewhat doubtful and perplexing term of what he terms the medium (*le milieu*):—"With me the medium comprehends the sum total of all the conditions of the empire, where either plant, animal, or man establishes itself, and advances itself to the state of germ, of embryo, youth, and adult" (p. 143). To some, possibly, the definition may appear more perfectly perplexing than even the term itself, and, instead of dissipating, may serve only to complete the obscurity. We believe, however, that, on the whole, it entirely meets the author's meaning; and that no other description could so completely comprehend the condition in question; the perfect accomplishment of which is necessarily a task of great difficulty.

On the general subject of the pursuit of anthropology, and the enlarged and comprehensive mode in which our studies ought to be followed, Professor de Quatrefages admirably remarks that "we can, and we ought to study the history of cultivated vegetables, and of domestic animals, to throw light on our own history. . . . Our orchards, our kitchen gardens, our stables, are the proper laboratories where we should work upon these organised beings, instead of confining ourselves to the materials afforded by the brute creation" (p. 144). He subsequently refers to the great variety in the races of dogs, as illustrative of that in the human species. The study of vegetables he shows to be also very useful in this way.

Chapter iv is entitled—"The primitive cantonment of the human species—the centre of the human creation." On the subject of this chapter our author observes that "certain facts allow us to conjecture with very great probability, that the centre of the creation of man will be found mainly in Asia, not far from the region at this day occupied by the central part of the structure. Indeed, round about this structure, or upon its flanks, we find the three fundamental types of humanity reunited by their intermediate portions, whether by the fusion of races one with another, or by the primary and very extensive modifications effected by the medium. Round about the same structure are distributed very different languages in vogue at the same time, and representing the three grand linguistic divisions universally admitted" (p. 171).

"The antiquity of the human species" and "fossil man" forms the subject of chapter v. "The peopling of the globe" and "migrations" that of chapter vi. "Acclimatisation" that of chapter vii. And in the eighth

chapter is considered "the origin of man ; man primitive ; man fossil ; the first European originators." Commenting here on the difference between men and monkeys, he remarks,—“The first is a walking animal, and walks upon its hinder members. All the monkeys are climbing animals” (p. 244). This is, however, hardly to be considered as an essential difference in itself, although it may be the result of a difference in their respective constitutions. A difference in habits and manners does not of itself prove a difference in man ; although it proves that their pursuits or their constitutions may have been different, which eventually led to their being different in the former respect.

The third part of Professor de Quatrefages's valuable and comprehensive work treats upon "the general character of the human race." He here observes that, "however incomplete is our actual knowledge, it embraces, nevertheless, nearly the whole of humanity, more or less the most essential groups, and the great majority of the secondary groups. . . . In order to enable the anthropologist to form a correct idea of the nature and the importance of physical peculiarities, and of those which are intellectual or moral, characteristic of the human groups," what we know of the human race is sufficient to qualify us for the pursuit (p. 275). Chapter i of the present part treats on "physical characters." On the subject of "proportions" he remarks that "in all our domestic races, the relative proportions of different regions of the body supply important characters. It is the same with man" (p. 281). On the subject of colour he observes—"With all the anthropologists I attach great importance to the colour of the skin, the eyes, the hair, etc." (p. 284). The eye generally, its vivacity, its brilliancy, its mode of action, doubtless affords a marked indication of character of each kind, physical, intellectual, and moral ; but it may surely be doubted much whether its mere colour is sufficient for this purpose, being dependent on the general complexion of the rest of the frame, which is not certainly indicative in this respect. Indeed, he afterwards states that "the colour of the eyes is not of the same importance as the colour of the skin" (p. 288). But, as we have already hinted, is not the colour of the eyes mainly, if not wholly, dependent on that of the skin ?

In a subsequent part of the present chapter he remarks,—“One is led to ask whether smell (*odeur*) can be a characteristic of race. . . . The senses of savages, more exercised than ours, extend further. They can distinguish smells as we distinguish colours” (pp. 290, 291). On the subject of the trunk and the extremities, he observes that “among the well-to-do and intelligent classes of society, the body is sacrificed to the spirit ; among the necessitous classes it is often sacrificed to industry, and too often to vices, when civilisation alike favours

their development, and affords them the means of gratifying them" (p. 294). He subsequently refers, on the authority of Gratiolet, to "the intellectual youth (*jeunesse intellectuelle*), so remarkable among men who have constantly exercised their minds" (p. 302). We are not quite clear here, however, as to the precise meaning of our author. Does he intend to assert that in old age the mind of cultivated men appears young and vigorous, and in a peculiar degree to retain its force and clearness? Or does he mean us to suppose that the youths of a cultivated race display a degree of intelligence beyond the children of persons not highly educated? These are questions of deep interest to the anthropologist, and of considerable importance to mankind at large, on which we do not now wish to offer an opinion, but hope on some future occasion to see them fully discussed and fairly disposed of.

A fact somewhat damaging to the theories of our friends the phrenologists, and which we commend to their serious attention, is thus stated by our author:—"The brain is not alone in the cerebral case, but it is there with all its coverings (*envelopes*). Now it seems to me but little probable that they should always be of the same thickness, always steeped in an equal amount of liquid, and that the cavities (*sinus*) shall have the same dimensions, etc. On these different points, as upon all others, it is necessary that differences should exist, perhaps considerable, between one individual and another, and very probably also between race and race. No one has as yet made any precise research with the object of ascertaining these differences, and of determining their importance (*valeur*). In the meantime it is evident what this influence is upon the volume of the regions of the brain (*l'encephale*)" (p. 303). It surely, however, would not be difficult, while it is at the same time very important, to ascertain these differences. Experiments for the purpose might be made upon the heads of animals as well as those of men. We may venture to infer, however, that the average difference would be much the same in different heads, so that in the great majority of instances,—in all where some peculiarity does not intervene to cause a variation,—the shape of the skull will be found pretty correctly indicative of that of the brain.

Professor de Quatrefages, however, informs us that "Gratiolet concludes that the development of the skull is, up to a certain point, independent of that of the brain, and that different parts of the region of the brain (*l'encephale*) develop themselves also, up to a certain point, independent of each other" (p. 304). But admitting all this, each part must ultimately attain its full growth and development, and so all these different parts will probably find their proper level at last.

[To be continued.]

DR. WISE ON RACE IN MEDICINE.*

THE work before us affords a mine of matter interesting to the student of the history of medicine, and in the portion of it relating to the origin and progress of medicine among the Hindus, we find traced out the germs of ideas which were subsequented, appropriated, and developed by the great men who were the fathers of European medicine. A large proportion of the most ardent wooers of anthropology are found among the professors and practitioners of medicine, but it is not from their point of view that we propose to review this book ; and we shall here only say, with respect to its general merits, that the untiring industry and well-known and various learning of Dr. Wise are everywhere conspicuous therein.

But these two volumes, which deal with the history of medicine among the Hindus and other Asiatics, furnish many facts for the consideration of the anthropologist, which are almost wholly disconnected from the region of medicine. Take, for example, the following passage from the introduction :—

“The cultivation of the mind improves the character of a people ; and the difference is marked between the ancient and modern Hindu family of Aryan physicians, educated during many generations, and the barber-surgeons of the Turanian race, without any education. As the subject was important, I selected an educated Voidia physician, and a barber-surgeon, quite uneducated, from among my assistants when in India, in order to examine the difference. The former, who was named Neem Chaund Doss Gupta, belonged to one of the four Voidya classes, which Bullal-Sen, the great Voidya king, instituted. His family had been for many generations the chief physicians of the province he inhabited ; and, in his authenticated family history, it is stated that they have been from time immemorial distinguished as physicians. For fourteen generations particulars of each succeeding individual are given, which, allowing only twenty-three years for the length of each life, would carry back the history of the family for a period of more than three hundred years, to about the time of Telenga Mukund Deb, the last able and independent king of Orissa. After a brave resistance, that monarch was conquered by the Mussulmans, and the distinguished men he had employed about his court were dispersed. It was at this time that Narayan Doss Gupta distinguished himself by his learning, etc., etc. . . . His son, and seven of his successors, supported a gratuitous Sanskrit school, in which the medical shasters were taught. . . . The thirteenth was physician to Rajah Roybullah. . . . His son, Neem Chaund Doss, was my friend, the fourteenth of

* *History of Medicine*, by Thomas A. Wise, M.D., etc., etc., vols. i and ii. London : Churchill.

this honourable list. In order to study the English system of medicine, he attended regularly the Dacca Dispensary and Hospital, and there he attracted my notice by his diligence and attention, and by his great intelligence and industry. I procured for him a situation under Government, with a small salary sufficient for his humble wants, and modest and retiring habits. He had an accurate and extensive knowledge of the medical shastres, a great part of which he knew by heart ; and quickly distinguished himself in practice, by his activity and correctness, and by the judgment he displayed in the treatment of disease.

"To mark the effect of the pursuit of learning, during so many generations, and of the want of education, on the physical organisation of the Asiatic, I sketched the profiles of two medical men. Fig. 1 is the profile of Neem Chaund, and forms a striking contrast to No. 2, the profile of a barber-surgeon, who was born of low-caste parents, that had for generations received no education, and got their living by shaving, cleaning the ears, trimming the nails, inoculating the small-pox, performing phlebotomy, extracting teeth, and assisting at certain Pagan ceremonies, as that of fixing the hooks in the flesh of those who swing round on a pole at the Ratgatra. I had frequent opportunities of observing the character of this individual. He was ignorant and superstitious, but kind, affectionate, and methodical, with a good deal of cunning. Such a low branch of the healing art is not connected with any caste, rank, or religion. Still, there are individuals among them (the barber-surgeons) who acquire much expertness in such a calling. They seem to transmit a degree of manual expertness to their descendants, who sometimes distinguish themselves as lithotomists, oculists, etc."

It should be here remarked that the Voidya or Ambastha caste, to which the physician above described, Neem Chaund Doss Gupta, belonged, is alleged by the Hindus to have sprung from the marriage of a Brahmin with a Vaishya, the Vaishyas ranking as the third caste, and being, or claiming to be, Aryan. Whatever amount of credit we may give to such a genealogy, it indicates the opinion of the Hindus that the physician caste sprang from among the gifted invading race, not from among the indigenous or previous occupants of the land.

It may be gathered from the passages quoted above, that Dr. Wise entertains decided views as to the importance of hereditary influence in the transmission of mental and moral qualities. Accordingly, he visits the caste system with less reprobation than it usually meets with from Europeans. "The institution of caste," he says, "at first accelerated the advancement of knowledge, by accumulating the experience of generations, enabling them to acquire a degree of hereditary aptitude and manual expertness, and develop an extent of ingenuity, that has scarcely been equalled in Europe." Subsequently, he allows, the very system which had produced this rapid development served only to petrify and arrest it.

The two heads figured by Dr. Wise give us the impression of belonging to men differing in race, taking the word in an extended sense. The physician has a head of what we commonly call the Caucasian or Indo-European type, with well-developed forehead and moderately prominent occiput, while the head of the barber-surgeon is globular or pyramidal, short, with sloping forehead and deficiency in the occipito-parietal region, resembling in type the heads of many of the races called Turanian, or of the peasantry in some parts of Italy. We have observed this latter type in the person of a gentleman of much intelligence and education, who belongs to the Kaistha or writer caste, who, though they hold a very respectable position, and have for many generations been educated men, are acknowledged to be Sudras, *i.e.* of indigenous blood, and whose physical type has not been elevated by Aryan admixture.

PENGELLY ON THE ARCHAIC ANTHROPOLOGY OF THE SOUTH-WEST OF ENGLAND.

AMONG the difficult and, as yet, unsolved questions of the day, few excite a greater interest than the antiquity of mankind. The Anthropological Society of London was established partly for the purpose of investigating this abstruse subject, and of collecting into one focus the scattered data on which the science of man must be raised. The facts and deductions are of only recent discovery, and are still in process of accumulation. It has long been incomprehensible to scientific inquirers that the short period of a few thousand years can have completed the rise and progress of man, with all his varieties of race and language. Variations of race take place so slowly and imperceptibly that ages must pass before a clearly defined distinction can be recognised. In appealing to history for information on the origin of the Negro or the Red Indian, we find that all is blank, obscure, and uncertain. If we go back to tradition, mere ridiculous fable and allegory take the place of facts; but when history and tradition are silent, archaic anthropology steps in to assist us, and we are enabled to learn something of the habits of the early races by the implements they have left behind in the strata in which they have been imbedded.

The gravel beds and bone caverns of England and France have afforded us the most ancient traces of man yet discovered. Professor

Worsaae and the Scandinavian antiquaries have divided into three epochs the prehistoric period. The earliest has been called the stone age, the long period of primitive barbarism: the first effort of human reason in self-defence was accomplished; a feat which none of the inferior animals has been able to accomplish. There is, however, a difference of skill displayed by the earlier and later workers in flint and stone. Then followed the use of bronze weapons, and these again the use of iron, and thus an iron and a bronze age form epochs of characteristic importance in the history of man. The flint folk seem to have been contemporary with the mammoth (*Elephas primigenius*), woolly rhinoceros (*R. tichorhinus*), and other species of mammalia now extinct. The records they have left behind in numerous localities in Europe prove their extensive range over a wide area. Boucher de Perthes traced their reliquæ on the banks of the Somme, when the river flowed at a much higher level than at present. Mr. Prestwich has ably confirmed and extended the views of the French geologist. Throughout the whole area hitherto examined, the same type of flint implements, tools, and weapons prevails. In the splinter of flint the early savage found his best cutting instrument; chipped to a point it formed a boring tool; flaked into oval or leaf-shaped forms it formed spear or arrow-heads; larger masses were used as missiles, or as battle-axes useful and formidable either in the chase or in war. Probably the act of chipping the flint with some hard ore of iron brought the flint folk to the discovery of fire: the Esquimaux and the Lapps still adopt this primitive method of obtaining fire. At all events, the ashes found at Wookey Hole, and at the mouth of the cave of Aurignac prove that fire was not unknown at the early period of their inhabitation. The process of smelting must have preceded the age of bronze, and long previous to the discovery of this art must some such easy process of obtaining fire have been known.

M. Lartet examined the contents of the cave of Aurignac in 1860; but in 1858 the systematic exploration of the Brixham cavern was made by Mr. Prestwich, Mr. Pengelly, and others; and this, as Sir Charles Lyell has remarked, "prepared the way for the general admission that scepticism, in regard to the bearing of cave evidence in favour of the antiquity of man, had previously been pushed to an extreme."

This essay of Mr. Pengelly, reprinted from the *Transactions* of the Devonshire Association for the Advancement of Science, Literature, and Art, throws some light on the changes which must have taken place in the relative adjustments of land and sea since the Brixham cavern received its deposits. On the floor of this cavern the flint tools of man and the bones of extinct quadrupeds were found in close

juxtaposition. If this deposit be rightly interpreted, the evidence is overwhelming that the extinct mammalia must have been contemporary with the existence of man, and preceded the age of that submarine forest, which covers a large portion of the bottom of Torbay, having been traced as far from the shore as the five-fathom line. It probably reached its present level by a gentle and gradual subsidence, for the trunks and roots of trees remain *in situ*. Long before the growth of that forest, which once crowned the surface of that inlet of the British Channel which now forms Torbay, man must have existed. But before we can form any idea of an answer to the question, how long? we must approximate our conceptions of time to some definite idea as to when Torbay was formed by the subsidence of the land on which that forest grew. The sea, however, is not the only covering of this ancient forest, for in the mining districts of Cornwall the workmen have penetrated through thick accumulations of material until they have reached these vegetable remains extending very far inland. And in this deposit at a depth of forty and fifty-five feet human skulls have been found at Gentman and Carnon;* also, at the former locality, a piece of oak which the hand of man had shaped, at the depth of forty-four feet. Who can estimate the remoteness of that period when these skulls were entombed? But a more remote period still must be that in which the remains of the Brixham cavern were deposited by the action of a mountain torrent. In reference to these questions, Mr. Pengelly observes:—

“Though the time required for and represented by the foregoing changes must have been great, it failed to fill the interval between the present day and the earliest traces of man in Devonshire. The submergence of the forests was not the thing of yesterday. In order to a determination of the antiquity of man in south-western England, to the time already demanded must be added that which has elapsed since the last adjustment of the relative level of sea and land” (p. 3).

This interesting question receives a large share of consideration in this pamphlet, indeed it is principally devoted to the history, legends and traditions of St. Michael's Mount, which archæologists may safely identify with the Ictis of Diodorus Siculus; and yet nineteen centuries have passed away since that description of the Greek historian was written, and no appreciable change has taken place between the physical relations of the island and the mainland. We shall not, however, follow Mr. Pengelly into these historical and traditional matters, interesting and valuable as they are, as they throw but little light over the more strictly anthropological subjects, which the study of the Brixham cavern and its deposits brings before us for our con-

* One of these skulls is in the Geological Museum at Penzance. It is very desirable to have a detailed description of it.

templation ; but we recommend them to the attention of archæologists. The author sums up his statement thus :—

“ . . . Since the era of that tranquil, uniform, and general subsidence, which resulted in the submergence of the forests, whose remains are found on the strands of all the British seas and channels, thick accumulations have been lodged in the valleys or the forest ground, and broad foreshores have been formed by the retreat of the cliffs before the waves, yet, at least, nineteen centuries have failed to produce an appreciable change in the character of the mount, or its relation to the mainland ; prior to this subsidence was the period of the forest growth, when the mount was unquestionably a ‘hoar rock in a wood,’ but which, in all probability, it had ceased to be very long before any language now known to philologists was spoken in the district ; before this again was the period of the deposition of the blue clay and of the tin-ground, in which the forests grew ; earlier still was the epoch of the excavation, or re-excavation of the valleys, in whose boundary hills are the caverns of South Devon ; and in a still more remote antiquity, when the bottoms of the valleys were, at least, one hundred feet above their present levels, persistent streams or fitful land-floods carried the characteristic red loam into these caverns. Great as is the age of these deposits of cave-earth, it does not exceed the antiquity of man in the south-west of England.”

THE ORIGIN OF THE GAULS.*

THE appearance of M. de Belloguet's work calls somewhat painfully to mind the fact that anthropological studies are regarded with far more favour in France than in England. M. Amédée Thierry's *Histoire des Gaulois* has already attained a sixth edition. The volume before us is the third part of a work which can already boast a second edition of its first part, and that first presents no more attractive title than *Glossaire Gaulois*. The writings of Dr. Broca and M. Pouchet are probably better known in France than those of any English anthropologist in England. And, though some English anthropological publications exist of which Englishmen may be proud, it would be difficult to point out one of which the first edition has been fairly sold out.

To us, therefore, on this side of the channel it seems somewhat strange when a Frenchman complains of the difficulty with which new and more correct views are adopted. M. Belloguet laments that

* *Ethnogenie Gauloise*, par Roget Bon. de Belloguet. Troisième partie,—“ Le Génie Gaulois.”

proofs drawn from history and from science are ignored in the latest editions of popular works, and plagiarist after plagiarist repeats the errors of his predecessors. His indignation is excited because M. Amédée Thierry still recognises a distinction between the Gael and the Cymry. What would he say if he lived in England and saw a work (brought out under the auspices of Oxford University) of which the first volume reiterates again and again, in defiance of historical criticism and physical facts, the astounding statement that Englishmen are Dutchmen?

In France matters are certainly better understood, because they have been longer and more carefully studied. Although the French are separated from the Germans by no more formidable barrier than the Rhine, Frenchmen of all ranks are quite satisfied that they are not of Teutonic origin. Though Britain is separated from Germany by the sea, there are still many Englishmen who believe that a few marauders from Jutland and Holstein have sufficed to people nearly the whole of Great Britain. So far as names are concerned, France and England are on the same footing, for each has adopted the name of a German tribe. In England, however, *littérateurs* and historians have fallen down and worshipped the word as a god; and only scientific inquirers are at present convinced that the word is in no degree an indication of the fact. In France, on the contrary, common sense, if not a more diffused knowledge of science, has impressed upon the national mind the conviction that great races are not annihilated by invasion. In spite of his name, and in spite of his language, the Frenchman never dreams that he is either a Roman or a Frank. He admits that both the Romans and the Franks have had an influence upon his history, but he prides himself on being what he knows that is, a Gaul by descent.

The application of anthropology to minor race problems affecting the inhabitants of France is thus rendered far easier than its application to similar problems in England. Here we still have to struggle for the establishment of first principles; there first principles, which have received the sanction of anthropologists, are firmly implanted in the public mind; and while we are labouring (not without success, it is true) to prove that if race means anything it means radical distinction between Germans and Englishmen, our French friends can limit their inquiries to the constitution of that Gallic nation which Cæsar subdued.

M. de Belloguet entertains, or rather appears at first sight to entertain, an opinion wholly different from those of Messrs. A. Thierry, Edwards, and Broca, concerning the signification of the term Celt. He regards the true Celts or Gauls as a race spread at various times over

a very wide area—from the British Isles to the mouths of the Danube—and characterised everywhere by “a milk-white skin, a lofty stature, a long face, and very fair hair.” He repudiates the distinction commonly drawn between the Gael and the Cymry, and admits only one Celtic people, which, according to his view, subjugated a round-headed brown race, previously master of Gaul, by whom the Celts were, to a great extent, absorbed. All who are acquainted with the writings of Dr. Broca, the great master of French anthropology, will remember that to this short-headed brown race, which still survives almost pure in Auvergne, he gives the name of Celts as distinguished from the tall long-headed and somewhat fair-haired race whom he distinguishes by the name Cymry. So far as the Cymry are concerned, he agrees with M. Amédée Thierry and M. Edwards, from whom, however, he differs in making Celt a term of special, instead of generic, meaning. And it is not too much to say that all these unfortunate differences have arisen from the old-fashioned and pernicious theory that language and race are always cœxtensive. The war is a war, not of facts, but of words.

It is quite possible that M. de Belloguet, M. Thierry, M. Edwards, and Dr. Broca may all be perfectly right—much as they seem to differ from each other. M. de Belloguet, as we understand him, asserts that the long-headed race, which he says was fair-haired, spoke a Celtic dialect; the other authors do not dispute the position. M. Thierry, discovering certain marked differences between the High and the Low Celtic dialects, assumes a corresponding difference of race; but even M. de Belloguet cannot deny that the linguistic differences exist. M. Edwards does but draw the distinction between the long-headed and the short-headed races; and M. de Belloguet admits the distinction, though he cannot agree with M. Thierry’s nomenclature. Dr. Broca boldly denies the value of philology in questions of race, gives an arbitrary definition to his terms, and when given maintains it consistently; but his facts agree with the facts of the other three authors. It appears from all this, that an international anthropological congress is very much needed to settle with authority the sense in which ethnic and other terms should be used. There is great waste of valuable force in these disputes which might be rendered impossible by common consent.

A man must be very bigoted who would refuse to abandon his own definition, however correct in his opinion, for the sake of uniformity; and until some definite understanding has been arrived at, each author who does not wish to fall behind the age would do well to define his own terms. It may be that the words Cymry, Celt, Gael, etc., will have to be abandoned one day by scientific anthropologists, and will become the mere playthings of third-rate anthropological philologists;

it will probably be found impossible in practice to disconnect the terms from some of their old associations. They must always be used to distinguish languages, and their use in anthropology will, therefore, always have a tendency to confuse language with race. Should M. de Belloguet's work have the effect of producing such a change, he will have been a very great benefactor to science.

So far as the leading facts are concerned, it does not appear that M. de Belloguet has brought to light very much that was not previously known to English anthropologists. M. de Belloguet's great point, however, is that the short-headed race which forms the chief constituent element in the Gallic nation, is to be identified with the Ligures of classical writers, with the "Lloegrwys" of the Welsh triads, and with the Gwyddil, Gaedhail, or Gaels. "We claim," he says, "the honour of having first presented them to the world of *savans* as the true root of our genealogical tree, by distinguishing them from the Iberians, with whom the ancients had confounded them, and who are, like the Celts, grafted in the west, on their prehistoric trunk." This Ligurian people M. de Belloguet believes to have been sober, accustomed to labour, well able to bear fatigue and privations, warlike, and remarkable for their courage. They were accused of perfidy and cruelty; but their two best marked characteristics were cunning and an indomitable obstinacy. They were at all times avaricious, and in war eager for pillage. They possessed quickness of perception, great natural eloquence, a keen sense of the ridiculous, a restless spirit of inquiry, and the faculties of invention and imitation. On the other hand, they were wanting, says M. de Belloguet, in "the religious sense," though, according to Cæsar, the whole of the Gauls were plunged in the most revolting superstitions.

This description naturally excites the inquiry—how is it possible to distinguish the character of the Ligurians from that of the dominant caste, the Gauls, if such a caste ever existed? A strict application of the principles of historical criticism compels us to pause before accepting M. de Belloguet's picture as an authentic portrait, though the same principle forbids us to assert that the portrait may not be correct. The truth is, that there is but little historical material in the writings of the Greeks and Romans, by means of which it is possible to draw even an outline of the character of any very ancient people considered as a whole, except, of course, of the Greeks and Romans themselves. And there is still less material for an analysis of the psychological characteristics of the component elements of any very ancient people. In the present case an attempt has been made to distinguish the Ligurians from the Gauls proper upon the most slender possible evidence. A few vague allusions from some of the poets, the notes of a commentator,

and the superficial remarks of one or two travellers may be given as the catalogue of authorities upon which the author relies, and which certainly appears to be quite insufficient for his purpose.

It would, however, be unjust to M. Belloguet to represent him as insensible to the difficulties which beset him on every side from want of materials. He is perfectly aware of the delicacy of his task, and endeavours to strengthen his position by those "considerations of general ethnology," which he has stated in the previous parts of his work. And he believes that the contradictions of various ancient writers upon the manners and customs of the Gauls considered as a nation are only to be explained by his hypothesis concerning the two component elements. Having assigned certain mental and moral qualities to the Ligurians, he assigns certain others to the Gauls proper according to his nomenclature—to the conquering race. The latter, though remarkable for beauty of form and feature, were, in his opinion, characterised by a fierce and impetuous love of action, by the want of reflection and fiery energy of the brute, by intemperance, and by a passion for ornament—qualities hardly redeemed by a certain simplicity and frankness, by credulity, and by a magnificent hospitality. It would require more proof than M. de Belloguet can adduce to convince the majority of men that nearly all the worst mental manifestations were exhibited by the race of better *physique* and nearly all the best manifestations by the race of worse *physique*.

All attempts to distinguish races by their psychical characteristics are dangerous even when the evidence appears to be ample and the differences well marked. There is a great tendency in this, as in many other subjects, to mistake words of little or of ambiguous meaning for facts of great importance. Take, for instance, such terms as "quickness of perception," "warlike disposition," "sense of religion," and consider what they may imply, according to the different views of different persons. They may mean almost anything, or next to nothing. Quickness of perception may be applied to a woman's eye for her neighbour's dress, or a man's generalisation of scientific facts. The definition of a warlike disposition must of necessity differ with the age which is under consideration, and the point of view from which it is regarded. The "religious sense" is, perhaps, the most unfortunate term which could be chosen for the discrimination of races. From different points of view it would be possible to maintain that any nation possesses a religious sense, or that any nation is without it. To the bigot nothing is a religious sense except that kind of sense which causes other men to think as he thinks himself. To the student of religion in general—of the sum of the religious manifestations in the world—there appears to be, if not a religious sense (which is too vague

an expression for scientific use), at least a common element of mind which causes human beings, however differently constituted in other respects, to accept a religious belief of some kind or other.

It appears without doubt, at first sight, to be a matter of little difficulty to describe the mental characteristics of any nation, or at least their salient features. But this is a branch of study, which, if it can be safely undertaken by anyone, can be safely undertaken only by a psychologist; and psychology is by no means the easiest of the sciences. Popular language may be very useful for an appeal to popular feelings, but scientific accuracy is not to be attained without the use of technical terms. Nothing is added to our knowledge when the character of a nation, or even of an individual, is given by a string of ambiguous adjectives. That kind of methodless ethnographical psychology is fit only for the Calibans of literature or the Plagiaries of science; and it is not desirable in the interests of anthropology, that the scientific world should be peopled either with Plagiaries or with Calibans.

Either ignorance or a deliberate disregard of admitted psychological laws would be excusable only if greater precision could be attained by the adoption of some new method. The discovery of the laws of association which have now been recognised by psychologists of every school, the works of Professor Bain, of Mr. Herbert Spencer, of Mr. G. H. Lewes, and of Professor Masson, have not been thought worthy of notice by M. de Belloguet, nor is there any trace of scientific method in *Le Génie Gaulois*. Psychology there is; but it is the psychology of the *littérateur*, not of the psychologist.

This literary superficial mode of treating mental phenomena throws over every proposition a haze which is not to be penetrated by the scientific eye. Thus, we not only have descriptions of character which would be almost equally applicable to a modern Eskimo and an ancient Greek, but we have endless repetitions in various forms of the old-fashioned jargon concerning the recognition of "A Higher Power." In one place we are told that a tribe is wanting in "the religious sense;" in another that "a sentiment, more or less instinctive, led the first Aryans to recognise above their heads a Supreme Author of all things, a general and omnipotent principle of existence." It would, perhaps, be impossible to invent a sentence which would more obviously display the absence of all psychological training than that which has just been quoted. Where could anyone hope to discover a more exquisite contrast than that which exists between the extreme vagueness of the "general omnipotent principle of existence," and the extreme precision with which the "general principle" has its place assigned "above the heads" of the first Aryans? Whatever may be t'

true definition of instinct, it is quite certain that the instinct of brutes would be of very little use to them, did it not enable them to discover facts very much more definite than general and omnipotent principles.

But all this comes of attaching too much importance to words. It is only what might be expected of an author who announces that the language of the Celts "proves" their eastern origin. It is the fault not of intellect but of a mischievous training in old-fashioned prejudices. Though we have not spoken in terms of very high praise concerning the third volume of M. de Belloguet's work, we nevertheless entertain a high respect for M. de Belloguet himself. His faults are the faults of the pernicious literary system which he has adopted, or in which he has been reared; but his merits are all his own. He is credulous in historical matters, he is blindly partial to the philological school of ethnology, but he is a man of rare erudition, and when he does not start with a foregone conclusion he shows powers of criticism and of combination which might have rendered his book a masterpiece.

He is well acquainted with the works of Adalbert Kuhn, and of Max Müller, and he criticises, while he adopts, some of their views on comparative mythology. Here again, it is true, appears the man of letters rather than the man of science, but still it is the man of letters of first rank; and that is always his position except where he travels beyond his sphere. Comparative mythology belongs at present to the domain of *Belles Lettres* rather than to that of science, and the discovery that M. de Belloguet has given great attention to it excites no surprise. He attempts to apply some of the principles of comparative mythology to the religion of the Druids. But, inasmuch as both the Druids and comparative mythology are very large subjects, we are quite unable to discuss them in a review which has already grown to a considerable length. We have only to remark, that we fear less is known about the Druids from trustworthy sources than M. de Belloguet supposes, but that, in spite of all its faults, his work is very interesting and even valuable by reason of the mass of facts which he has brought together.

OWEN'S COMPARATIVE ANATOMY OF VERTEBRATES,
VOL. III.*

THE publication of the third and concluding portion of Prof. Owen's great anatomical work is unquestionably an event which marks an era in anthropological science. We have already laid before our readers our observations on the two earlier volumes, and we shall endeavour to point out the principal passages of the present volume which are of interest to anthropological students, as well as to the student of those higher biological problems, on the truth of which sound anthropology must depend.

The most important part of this third volume is unquestionably that in which Professor Owen "revendicates" for himself the honour of being for many years a staunch and consistent advocate of the origin of species by a slow process of derivation by secondary law. It has been too much the fashion amongst the pseudo-scientific men of the present day to represent Owen as a believer in the eternity of species, and to have been an advocate against transmutation, *i.e.* against the derivative law having operated in the production of living beings. He, however, so long ago as 1850 ("On Genus *Dinornis*," part iv, *Zool. Trans.*, vol. iv, p. 15), illustrated the operation of this law. He naturally met with opposition, and many of our readers will, no doubt, be surprised when they read the following passage, which was used by Professor Huxley in the year 1854.† We quote it at length:—

"The object he had in view was to point out the general arguments adduced by those theorists who contend that there has been a progressive development of life since the globe first became habitable, commencing with the simplest forms of organisation, and proceeding regularly upwards to the most complex, and then to show that such a view of creation is not compatible with the facts disclosed by geological researches. . . . Mr. Huxley entered minutely into the differences exhibited in those fishes and in salmon, with a view to show that the development of an expanded tail could be traced anterior to the single tail of cartilaginous fishes, and, therefore, that this point on which progressionists have placed so much reliance entirely failed them. In several other respects also the organic remains in the lower series of rocks exhibit a higher degree of development than appears in animals of the same class in subsequent periods. Thus, though a superficial

* *On the Anatomy of Vertebrates*, vol. iii. By Richard Owen, F.R.S., Superintendent of the Natural History Department of the British Museum, Foreign Associate of the Institute of France, etc. London: Longmans, 1868.

† Huxley *On Progressive Development of Life in time*. Royal Institution, 1855.

view of the successive classes of animal life may appear to sanction the opinions advocated in such works as the *Vestiges of Creation*, a more close examination dispels the notion of progressive development, and proves that it has no solid foundation."

When such opposition as this was led, not merely to "vestigism," but to any scheme of transmutation, or progressive development, it is not remarkable that a large proportion of our scientific men refrained from accepting the derivative theories of Owen. The publication of Darwin's work popularised a scheme of development which was as old as science. The principle of natural selection had little in it new, though much which was true, and had been previously demonstrated. The systems of Lamarck and the *Vestiges*, inaccurate though they may be, had a far more philosophical basis than modern Darwinism. To Lamarck especially is due our highest thanks, for having been the first to develop a theory of transmutation and progressive development, based on a semi-Lucretian foundation. Darwinism in 1869 has had already the test of nearly ten years' experience, and during that time has failed to acquire many more votaries than those which it acquired during the first few months of its existence. The reason of this is that it is merely a scheme, and not a *μεθοδος*: it is an hypothesis, not a theory, and, as such, will never be acceptable to strict scientific analysers. Fulsome adulators of Darwinism have compared his hypothesis with the Copernican theory: but there is really no higher scientific excellence in Darwinism than its sister sciences, mesmerism, phrenology, spiritualism, teetotalism, besique, or velocipedism; and there is a correlation between these sciences which is often presented by the leading Darwinists. Some Darwinists are phrenologists; some mesmerists; whilst the chief leaders are spiritualists. The reason why these somewhat equivocal sciences are connected in the mind of the same individual may not appear manifest, and we can only account for the fact that Mr. Wallace, *e.g.* is an eminent Darwinist, and a still more eminent believer in spiritual manifestations, on the theory of accidental correlation, *e.g.* that blue-eyed cats are generally deaf, and that short-beaked pigeons have small feet.*

But there has been a cry raised that Professor Owen is not sufficiently frank, not sufficiently liberal, and that he is in fact a representative of "official" and cautious science. This charge is most unjust. It comes especially unjustly when it is applied to a man, who even in the moral and mental corruption produced in the present day by pampering to the imaginary desires of the lower classes, has never, so far as we know, degraded himself or prostituted science by giving series of lectures to "working men," and has endeavoured to preserve

* Darwin, *Origin of Species*, ed. 1861, p. 12.

science exact and truthful, whether or not it may be widely diffused. Yet it is suggested that the constant and habitual reticence which Professor Owen has always exercised proceeds from an indisposition to make public his thoughts, or to be on the unpopular side. We dissent entirely from these opinions. Nobody should proclaim anything to be true, or should teach, until his own mind is decidedly made up; and Owen, who has long advocated the derivative law, at a period prior to the publication of Darwin's work, should not be twitted with reluctance to express his conviction.

It is certainly according to our interpretation of the laws of criticism both severe and unmerited to put a commentary on words which, on the face of them, do not advocate a certain theory by reference to the author's known opinions. Bolgeni, in an analogous case, says "Il dire che in quei casi niuno ha diritto d'interrogare; che le parole significano secondo la convenzione comune fra gli uomini; e cose simili, che da alcuni autori si dicono per esimere da peccato la bugia in quei casi; questo è un attaccarsi a ragione frivole, e soggette a molte repliche quando si ha la ragione evidente della citata impossibilità" [*Il Possesso*, c. 48]. Professor Owen's style is usually so thoroughly exact, that careless critics may slip into many pitfalls, if they do not entirely master the habitual language in which our great master inculcates his methods of thought, and always, not merely tells the whole verity, but avoids the error by which the incautious teacher prætergresses the limits, not merely of necessary truth, but of absolute verity. Many of his reviewers, however, do not appreciate the merits of a style which

"Eluding, ne'er deludest,
Nor deceiv'st, nor art deceived,
But including, still excludest,
Fully known, yet not perceived."

His style is not sufficiently "frank," not sufficiently gushing for them. It will not do for "working men," except for those who admit that "Si autem jurans dolum non adhibeat, obligatur secundum intentionem jurantis." The fact is, people in the nineteenth century are so little accustomed to have actual truth told them, that they think it looks mediæval.

Professor Owen, however, can confidently appeal to future generations, when his work the *Anatomy of Vertebrates*, will be read with profit and instruction by thousands of future students. The small jets of fluid which little beings may discharge on the corners of mighty monuments seldom affect the period during which the architecture may be preserved. The eloquent words of Dr. Ingleby, in his recently published *Introduction to Metaphysic*, may be here applied with great profit. He says:—

"The few whose faculties and leisure have been devoted to the abstractions of philosophy will have little fruition from an incommunicable discovery, or from a success which they can only celebrate 'like children sitting in the market-place.' Nevertheless, the few who, undismayed by the certainty of neglect, have made philosophy a life-long labour . . . will assuredly not keep silence, though their words are doomed to perish speedily, or to contend painfully and slowly with an outer darkness far more hopeless than that of the tomb."*

We now turn to the more especially anthropological parts of the work, and the first passage we shall notice is that which refers to the complexion of the races of men, in which certainly Professor Owen details his theory at considerable length.

"In the human subject the amount and colour of the subcuticular pigmental cells relate, but not absolutely as regards existing continents and peoples, to the degree of solar influence to which the skin is exposed. A fair complexion and light hair do not characterise any race indigenous to tropical and warmer temperate latitudes, but are limited to cooler temperate and warm climes, which, from the present excess of dry land in that hemisphere, are northern or arctic. The continent of Europe, if the complexion of its people be compared from Scandinavia to the Mediterranean, exemplifies the progressive deepening of the tints of skin, hair, and eyes, as the sun exerts more power. But the Asiatic part of the old world shows this relation to a minor degree. The aborigines of Northern Asia to Kamtschatka are like the Japanese of a brownish-yellow complexion; the same prevails through all the latitudes of the vast Chinese empire; but the southern extensions of that people into Cochin China, Siam, and Burma, do show a deeper brown. The Hindoos retain the same almost black tint over a range of twenty-six degrees of latitude and twenty-four degrees of longitude; but these are tropical, or nearly so. The Malays of the Indian Archipelago preserve the same deep brown tint over eighteen degrees of latitude, reckoned from the equator northward, and the tint would seem still to relate to such excess of solar influence; although the sway of other causes is exemplified by the darker Mincopies, Cingalese, and Hindoos, under similar influences. Still more strikingly is this shown by the blackness of the Melanian aborigines of New Guinea, Australia, and Tasmania, retained from the sixth to the forty-third degree of south latitude; and especially of those of the outlying islands in proximity with others inhabited by the olive brown Polynesians, whose complexion prevails from lat. 12° south to 46° south (New Zealand). But the most instructive example of the chosen relationship of tint to race than to climate is afforded by the aborigines of the New World, which hold nearly the same depth of copper-brown or reddish tint, latitudinally from Tierra del Fuego to Hudson's Bay, and longitudinally from the Atlantic to the Pacific. The contrast between the South American Indians and the African Negro would seem to be decisive against the hypothesis of degrees of solar influence

* *Loc. cit.*, p. 206.

being the causes of degrees of darkness of complexion. But there is an element in the problem which ought to be taken into consideration, viz. *time*. If Africa be an older continent than South America, its aborigines may have been subjected to solar influences through a longer series of generations. We know not the extent of such series; some may deem that were the intertropical South American Indians subject to a vertical sun during the long ages of Africa's emersion, they would acquire a darker complexion. Climate, however, depends on other influences than sunshine. Degrees of moisture, and whatever influences cause a contrast or gradation of seasons, etc., may have their influences upon complexion. Filthy habits, foul air, and bad food affecting biliary and other secretions, have their share in darkening the skins or sallowing the complexions of the Esquimaux, Fins, and Laps, *e.g.* as compared with the cleaner and more healthily living and better nourished Scandinavians residing some degrees further from the pole. But assuming, as the general result of the above survey of human complexions, that such complexions do, in the main, show a certain dependent relationship on solar light and heat, and postulating the effect of long periods of such subjection, we might then be led to conclude the darkest of the intertropical and warm temperate peoples to be the oldest; that the Melanians, scattered on islands to the east of the Indian Ocean, inhabit relics of a continent, as old as, perhaps older than, Africa; and that the lighter-tinted races on intercalated or contiguous portions of dry land are subsequent immigrations or derivatives from lands less affected by solar influences. On this hypothesis it may be inferred that the deepest tinted races existing in the islands of the Malayan Archipelago are the oldest inhabitants of such—those most entitled to be termed aborigines. The Hindoos, by the same pigmental test, would be deemed older than the Parsee or Mohammedan natives of Hindostan, as history indeed testifies. In extratropical latitudes human generations may have succeeded each other for the same duration of time as in tropical ones, without further deepening or development of pigment than such diminishing influence of the sun may effect. Such peoples, migrating to tropical countries, may long maintain their inherited complexions; just as the black races migrating to extratropical latitudes long retain the tint inherited from forefathers in whom it has been established primarily by the requisite continuance of exposure to extreme solar heat and light" (p. 614-616, vol. iii).

The passages in Professor Owen's work which relate to the muscular system of man and the apes should be read with the greatest care, as they are conceived in a most exact spirit. We especially commend to our readers the diagram in which the muscular systems of the foot of man and the gorilla are placed side by side, and the important distinction between the tendons very well shown. This distinction it has been of late years the fashion to ignore, and was the subject of an animated discussion between Messrs. Rolleston and Carter Blake at the Newcastle meeting of the British Association

(1863). The facts which Mr. Carter Blake then asserted have been amply corroborated by Professor Owen's description in the present work ; and if Professor Rolleston reads the passage cited, he, perhaps, will see that his charges were not merely intemperate, but inaccurate. The voice of contemporary science has long since rectified the matter. With regard to the nervous system, Professor Owen's researches are of the most important character. He collects and incorporates in the present work a large amount of the notes of his Hunterian courses of lectures before the Royal College of Surgeons many years ago, in which the characters of the gyri, sulci, and convolutions are most carefully described. We think that every F.A.S.L. who is a student of the characters, anatomical, physiological, psychological, of the human brain should read Professor Owen's analysis of the method by which, taking the lowest and most smooth-brained gyrencephale as a starting point, the convolutions of the brain are *seriatim* developed, till at last we reach man. Professor Owen suggests a new classification of the cerebral folds, arranged in the order of their constancy in mammals, and differing from those of Rolando, Leuret, Gratiolet, and Broca, the three first of which he exhibits in parallel columns to his own, in a very lucid table on his 137th page. There are in all forty-five cerebral folds and forty-five cerebral fissures described by him. He notes all fissures by numbers, and all folds by letters, as in his memoir on the Anatomy of the Cheetah (1833). This system is highly convenient, although as Professor Owen points out, the "mode of notation has been reversed by a subsequent author, but no advantage from the innovation is pointed out, or seems to be gained thereby."

The chapter with regard to development needs also to be carefully studied, as it places the reader entirely on a level with the latest researches of the recent German embryologists on this most difficult and most complicated point of biology. We trust that no one will criticise either this chapter, or that on "general conclusions," who has not read and thoroughly comprehended the whole three thick volumes which precede. If anyone skips Professor Owen's facts, and flies at once to his 821st page of vol. iii, he probably will be somewhat puzzled. Metaphysics and theology are alike discussed therein, and Professor Owen deems it his duty to expound his belief on the relation between physiology and theology. The following passages we think are plain enough, and we commend them to our readers as evidence that Owen is not deterred by what has been justly called "weak Exeter Hall drivell"* from expressing his full belief. He says:—

"I am most averse to travel beyond my proper province ; but a general physiological conclusion from the phenomena of the nervous

* *Tablet*, March 20th, 1869.

system inevitably brings on collision with a dogmatic affirmation or definition of the cause of the highest class of those phenomena instilled as an article of religious faith into fellow Christians, and on which is based their mode of thought affecting dearest hopes and highest aspirations. . . . If the hypothesis that an abstract entity produces psychological phenomena by playing upon the brain as a musician upon his instrument, producing bad music when the fibres or cords are out of tune, be rejected, and these phenomena be held to be the result of cerebral actions, an objection is made that the latter view is 'materialistic' and adverse to the notion of an independent, indivisible 'immaterial' mental principle or soul. What 'materialistic' means in the mind of the objector I nowhere find intelligibly laid down ; but it is generally felt to be something 'inconsistent with, or shaking, the foundations of an article of faith,' as Stillingfleet would have said" (p. 821).

"In the endeavour to clearly comprehend and explain the functions of the combination of forces called 'brain,' the physiologist is hindered and troubled by the views of the nature of those cerebral forces which the needs of dogmatic theology have imposed on mankind" (p. 823).

"If the physiologist reject the theological sense to the term 'life' without giving cause for the charge of unsoundness in religious principles, does he lay himself more open to the charge by rejecting also the theologian's meaning of the term 'spirit,' of the term 'soul,' of the term 'mind,' and we might add of 'sin' or 'death ?'" (p. 824.)

"We know of nothing more 'material' than the 'centres of force,' our ideas of things without as within the 'ego' are the action and re-action of forces, as 'material' or 'immaterial' as the ideas themselves" (p. 824).

In the above passages the trumpet gives out no uncertain sound, and the meaning of the author is clearly expressed without any regard to the value of popular beliefs or to the mere evanescent prejudices of the nineteenth century. No fear of odium has here deterred Owen from "showing his colours."

Professor Owen may, perhaps, feel that, after he has taught, not merely anthropotomy, but the groundwork on which anthropological science is based, that a new generation of unscientific and semiscientific men may neglect his teaching and disown his doctrines. He has never been a "fashionable" teacher. Yet, when he contemplates the little energy and the feeble amount of vital force, which it is necessary to expend to become a teacher of modern English science, he may, perhaps, as many anthropologists now do, recall the words of Thiers (*Histoire de la Révolution*, p. 512):—"Depuis ces temps où Tacite la vit applaudir aux crimes des empereurs, la vile populace n'a pas changé. Toujours brusque en ses mouvements, tantôt elle élève l'autel de la patrie, tantôt elle dresse des échafauds, et n'est belle et noble à voir, que lorsque, entraînée dans les armées, elle se précipite

sur les bataillons ennemis." Teachers of comparative anatomy have little to hope or to fear from the epidemic disease termed "public opinion."

INAUGURAL ADDRESS TO THE PSYCHOLOGICAL
ASSOCIATION OF GLASGOW.*

By J. W. JACKSON, Esq., F.A.S.L., President.

PSYCHOLOGY may be defined as the science of the inner life of mind in contradistinction to the outer life of the body, with its subdivisions of anatomy or structure, physiology or function, pathology or disease, and we may, perhaps, add hygiene or health. Psychology also has its subdivisions. There is the mind in its normal and abnormal condition; in vigilance, in somnolence, in exaltation, and in derangement, with the experiences peculiar to each. And lastly, there is comparative psychology, embracing the mental constitution of the various races of men, and the different species of animals—a rather extensive programme, as will be seen when we come to fill up this bare outline with its appropriate details. Let us glance at some of these.

There is mind in its normal condition, and as all our experiences of this have been in connection with a corporeal structure, one of the first subjects for our investigation is the nature and extent of this connection. Is mind necessarily, and so always, united with a physical organisation as an unavoidable condition, if not of its existence, then, at least, of its manifestation? And, if so, then to what extent and in what manner is it dependent upon this organisation? Are our mental operations merely a function of our corporeal structure, or is the latter simply an instrument provided for, and, in a sense, developed by the former? And, in either case, to what extent is corporeal structure indicative of mental endowment? Here we are brought face to face with phrenology, physiognomy, the psychognomy of the hand, and those other real or pseudo branches of science that profess to afford a diagnosis of character from corporeal indications. Is there any truth in these things, and, if so, to what extent is it mingled with error in the present state of these interesting, though scarcely recognised, departments of inquiry?

Then we have mind in its normal condition of vigilance, with its powers of perception, memory, reflection, and imagination; its moral

* Delivered February 23, 1869.

sentiments, its domestic affections, and its animal propensities. Now, what is perception? Is there in truth an objective sphere on which it can be exercised, and, if not, then are we to regard it as a purely subjective experience? And, granting that there is an objective sphere, what is our relation to its phenomena; to what extent are they modified by our subjectivity in the process of their apprehension; in other words, how far are actual things in congruity with our ideas?

Then, what is memory? By what process do we recall the past? This again involves the stupendous question, what is our relation to the time-sphere? By what law of our being does this immediate present that we term "now" become that remote past which we term "then"? Can we illustrate this speciality of duration by the corresponding speciality of extension, in virtue of which we are enabled to speak of "here" and "there"? Are time and space in very truth mere forms of thought, that is of *our* thought; and if so, by what speciality in our mental constitution are we thus compelled to contemplate events in sequence, and to perceive things in place? Does phrenology throw any light on this subject by its revelation of the fact that we have an organ of time and locality in immediate proximity to the perceptive faculties, and so placed between them and the reflective powers as to impress the ideas of duration and extension on all the varied subject-matter of thought?

And what are we to say to our powers of thought? By what sublime chemistry does the mind transmute the perishing facts of experience into the everlasting principles of things; by what process does it ascend from phenomena to the laws on which they depend? Have we any definite and satisfactory conception of the process by which we advance from an effect to the cause which has produced it? Nay, are we quite sure that this is the process which we really do perform? Are phenomena aught other than the play of our waking subjectivity, like the phenomena of dreamland, admittedly the play of our sleeping subjectivity? Is there, nay, *can* there, be aught *real* save that which is absolute and unconditioned, and if so, what is perception but thought apparently ultimated into fact, in certain states of the spiritual percipient?

And what is imagination? By what process do we frame ideas of things that are not? Have we not, indeed, some grounds for regarding imagination as a species of spiritual perception, a prelude to that which we shall presumably exercise on the higher plane of a future life? Has it not all the characteristics we might expect from perception in an environment more obedient to the plastic power of the spirit than that in which we are now placed, its apparent want of reality being due to the fact that it does not pertain to our present but to a prospective sphere of existence?

And what are our moral sentiments? Through what elements in our nature are we so related to truth and rectitude that their violation gives us pain—the indication that an injury is being done to our higher being? And how are we so related to that which is above us that we revere it? Is the sentiment of veneration our consciousness of the process by which we are growing into the likeness of that which is superior to our present condition? What is our sense of responsibility? In what present endowments does it originate, and what future possibilities does it indicate?

And what shall we say of the passions, of those more violent impulses and more grovelling propensities which we share in common with the brutes? Of what elements and relationships are these the indication? By what speciality of organic structure or mental constitution, does man, who mounts skywards to the empyrean in thought and aspiration, nevertheless sink earthwards into the mire and clay of sensuality, through these inferior attributes? Have we yet admeasured the stupendous *breadth* of nature implied in this dread ability to touch simultaneously two such wide extremes? Are not these passions the elements of action, still imperfectly disciplined, a remnant of chaos not yet fashioned into the order and beauty of creation; not the fragrant blossoms and beautiful flowers of the spirit, but the dark and unsightly *roots* of our being, and so, perhaps, necessarily somewhat of the earth, earthy?

And what are our domestic affections, whereby we escape from the narrowness of self into the more expansive realm of the family and the neighbourhood? Whence do these kindly susceptibilities originate, and of what higher spiritual attributes are they the symbols, and in a sense, perhaps, the germs? Are they the beginning and the promise of that universal love which only attains to completeness on the plane of the infinite, where the divine mind comprehends creation, encircling its manifold provinces in that all-embracing affection, from which no form of being is excluded as an alien to the great family of God?

And now, still keeping to mind in its normal condition, what is sleep, and how are we to define and account for dreams? Is unconscious slumber really dreamless? Do the experiences of our mesmeric subjects, when in the magnetic sleep, warrant any such conclusion? Are they not equally unconscious of the thought and action whereof we have been the witnesses, and in which they were the agents, but of which they awake utterly oblivious? And what are the scenery and *dramatis personæ* of dreamland? Why do we believe, night after night, in their reality, though we wake morning after morning to a vivid perception of their fictitious character? But are they fictitious—on the dream-plane? Has not somnolence its world as well as vigilance, their relation to

the consciousness being diverse, while their reality as psychological phenomena and their importance as educational instrumentalities may, for aught that appears to the contrary, be equal? At the lowest estimate, are not our nocturnal experiences "a dream within a dream;" life with all its stupendous interests being but "such stuff as dreams are made of;" that is, subjective conditions, projected by the play of the consciousness into an apparent objectivity, whose reality is relative, not absolute?

Can we experimentalise on this subject by the aid of phrenomesmerism? Are not the experiences and manifestations of our magnetised subjects, of the nature of dreams, artificially induced and scientifically regulated? And are not the indications thus obtained very strongly indicative of the fact, that subjective conditions are the determining element of (apparent) objective projection? Thus, for example, by the excitation of philoprogenitiveness we induce activity in that phase of affection which consists in the love of children or animals, and a baby or a quadrupedal pet becomes at once present to the consciousness of the subject, who for the time believes in the objective reality of this subjective experience, with all the undoubting faith of a true dreamer. It is the same with benevolence, whose activity is almost invariably accompanied by a visional presentment of the hungry or ill-clad recipient of its bounty; while veneration, when duly evoked, will in a similar manner conduce to the attitudes and accessories of devotion. Now, with such an instrumentality at our command for the investigation of mental phenomena by experiment, we shall be exceedingly blameworthy if something be not done in this direction, to throw additional light on the conditions and processes of ordinary dreaming and even of visional ecstasy; while in accomplishing this, we shall, perhaps, also help to illustrate the laws of thought and imagination, as manifested in the condition of normal vigilance.

Perhaps the last sentence demands some expansion. As you are doubtless aware, the wondrous and altogether unexampled progress of physics during the last two centuries and a-half is wholly due to the inductive method of investigation, under which fact superseded hypothesis, and every theory, however plausible, was subjected to the test of experiment. Now the grand desideratum in mental science is this supercession of hypothesis by experiment, in other words, the substitution of the *à posteriori* for the *à priori* method of investigation. Nor can anyone who has watched the direction of the profounder intellectual currents of modern Europe doubt that this great revolution in metaphysics is steadily and surely approaching. Nor can we be mistaken in affirming that when it has arrived speculation will be subordinated to observation. But for the effective illustration of the laws

of mind, as of matter, we require something more than an accurate observation of spontaneous phenomena. We must also be able occasionally to institute an experiment, to put nature to the question, and evoke an answer at our pleasure. Now for this purpose phreno-mesmerism is invaluable. By this stupendous instrumentality we can first reduce our subject to the profoundly dormant and unconscious condition, attainable only in the magnetic sleep; and then at our pleasure we can evoke any one of the passions, affections, sentiments, or faculties into isolated manifestation; or we can combine two or more, and watch the manner in which they modify each other, or are acted on in turn by the introduction of a third or a fourth, as the experimentalist may determine. That such an instrumentality should have been so long neglected, while *à priori* hypotheses of perception and thought, of memory and imagination, together with the association of ideas, and all the time-honoured notions of the old metaphysics are still taught with professorial authority at all our universities, can only be paralleled by the corresponding fact, that the Ptolemaic Astronomy still had its endowed chairs, long after the calculations of Copernicus and the discoveries of Galileo had demonstrated its absurdity.

But, to return to our dream-life; there is yet one other subject in this connection which it behoves us to investigate; I allude to the symbolism said to underlie the weird forms of our nocturnal experience. As you are doubtless aware, the Bible, as a venerable Oriental record, contains several magnificent instances of this asserted spiritual correspondency, in the dreams of Joseph, and of the baker and butler of Pharaoh, together with those of that monarch himself, and also, we may add, of Nebuchadnezzar, as narrated in the book of Daniel. Now the question is, what amount of truth underlies this wide-spread belief of the older generations, whose almost universal prevalence indicates an element of veracity as its basis? Is the apparently chaotic imagery of our dream-life the symbolic vehicle of spiritual truth, perhaps no otherwise communicable; and if so, of what relationship to other, and perhaps higher planes of being, is this the mysterious indication?

Now from these very imperfect and fragmentary suggestions you will at once perceive that some most stupendous problems are still awaiting solution at the hands of psychologists, without transgressing the limits of that normal experience which is common to all men. But we shall greatly underestimate the range and importance of this branch of science, if we regard it as applicable only to the doubts and difficulties already enumerated. There is another province equally demanding the labours of a competent explorer. I allude to the mystic domain of those abnormal and exceptional conditions of mind which are not

common to all, but only to the favoured few, who enjoy the exaltation, or the pitiable many, who suffer from the confusion and derangement attendant on a departure from the ordinary standard of mental health and vigour.

And first of exaltation. What is genius? How are we to define it? In what does it consist? Has it any relation to corporeal structure? To what extent is it dependent upon circumstances for manifestation or for the form which its productions are to assume? Are all original thinkers endowed with this attribute? In what does genius differ from talent, and how far do those who possess it constitute a special order in the great hierarchy of intellect? Again, what are its distinctions and gradations? For example, by what elements is the painter distinguished from the poet? and how is the composer differenced from either? and by what speciality in the inspiration of the prophet is he elevated above the bard? What is inspiration? From what fountain does it flow? and on what speciality in the human recipient does it depend for the character and quality of the manifestations in which it is to eventuate? Was Raphael of necessity an artist? Had Shakespeare lived in any other than the Elizabethan age, and during a dramatic era, could he have produced Hamlet and King Lear? What is "the spirit of the age"? and how far are individual men, even of the most commanding order, its blind instruments and obedient spokesmen? This opens up the great question,—What is the relation of the individual to the mass? Does humanity constitute a vast spiritual unity, of which the masterminds of thought and action are but the special organs? and if so, what is the place of this unity in the scale of universal being?

We have spoken of the prophet. Now what is he, more especially in his highest aspect, as a religious founder? Can we, by the lowly road of induction, even remotely approach, to scan with profane eye, the sublime altitude on which he so serenely reposes as the regal hierophant of the ages? Let us try the lower steps of this angels' ladder, which, like that of Jacob, reaches from earth to heaven. What are presentiments? How do "coming events cast their shadows before," so that we become dimly conscious of the impending good or evil awaiting us on our predestined pathway through the wilderness of time? And what is the essential character of the yet clearer revelation afforded by actual prevision? What does this occasional liberation of the human mind from the limitations of the timesphere indicate? Can we experimentalise in these things? What, for example, is the clairvoyance of a mesmeric subject? and how does it differ from the lucidity of a spontaneous ecstatic? What is supersensuous perception? and on what organic or other conditions in the seer or his surroundings does

it depend? Is a prophet, even of the highest order, only an ecstatic lucide? and if so, do our clairvoyant patients approximate in any manner or measure to his condition? In short, are the great architects of faith simply arch-ecstatics, the most sensitive recipients, and so the representative spokesmen of the finer influences, or as we say, religious spirit of their respective ages?

Perhaps at some future period we may have a paper specially devoted to this subject; in the meantime I would observe that the authoritative creeds of men, and the forms of their worship, are all worthy of the most serious attention of the psychologist. Whether past or present, fossilised or vital, the various religions of mankind demand our profoundest study. Originating in the most exalted seerdom, often accompanied by great thaumaturgic power on the part of their founders, and requiring the most ardent faith on that of their early converts, they present us with psychological phenomena on the grandest scale and of the sublimest order, which, if wise, we shall not neglect, or again consign to the practical oblivion of ecclesiastical history. It is the same with the lives of saints and martyrs, whose visions, ecstasies, and inspirations are an invaluable storehouse of psychological experience; which a blind superstition may have preserved, and a shallow scepticism refused to accept, but which a true psychology, profounder than either, will employ for illustrating the laws of mental exaltation.

Perhaps some of you shiver in the glacial cold, and palpitate in the thin air of these Alpine heights of thought; so let us descend to a somewhat lower level,—I mean the once dread, but now despised, province of the occult. What was the ancient magic, and how were its wonders effected? To what extent were they dependent upon the mental condition of the operator? What was the old thaumaturgia, and what is modern spiritualism? No true psychologist will neglect either the one or the other. Were and are the results produced through their instrumentality of an objective or subjective character? What was a magician, and what is a medium? We must be prepared to investigate these subjects without the superstition of the past, or the superficiality of the present. Our duty is neither to accept nor reject a mystery as such, but as far as possible to lift the veil beneath which its processes are effected and its results accomplished; and I accordingly rejoice to know that a certain section of our association intend to devote their attention to a carefully conducted series of experiments, with a view to the elucidation of those extraordinary phenomena whereto modern spiritualists have so honourably borne their fearless testimony. This is what we need, if psychology is to become a science; namely, experimental investigation, conducted by

competent persons, provided with the requisite instrumentalities, and who will approach the subject devoid of those preconceived ideas which have hitherto fatally vitiated all inquiries in this direction. Nor in saying this would I be understood as referring only to the opponents of spiritualism; for the uninquiring acquiescence of a facile believer is often as damaging to the efficiency of inductive investigation as the blind opposition of the most bigoted antagonist; for if the latter sees less, the former as often perceives more than the facts warrant. Let us, then, endeavour to avoid either extreme; and we cannot do so more surely than by strict obedience to the rules of the great master of Induction, so clearly laid down for our guidance in his remarks on *Idola*, in the aphorisms of his "*Novum Organum*."

And here let me recommend that, in such investigations, you do not neglect the domain of popular superstitions. The psychology that despises ghosts, wraiths, doppelgangers, and second sight, is on a level with that which has so long regarded phrenology and mesmerism with distrust, and esteemed dreams and presentiments as beneath its serious notice. Such a psychology may be very respectable and inoffensive. Like other tame mediocrities, it may have few bitter enemies, and excite little serious opposition; but I must warn you that it will accomplish no great results. Popular superstition is a vast storehouse of records relating to the spontaneous occurrence of psychological phenomena, and our duty is not to reject the whole of this testimony without inquiry, because the fortunately situated observers of these rare phenomena were mostly incompetent; but to sift and compare their narratives, and where possible, to illustrate and parallel the spontaneous by the induced. Neither will a true psychology despise the phenomena of insanity, or even of idiocy. With the former, there is often a combination of some of the specialities of exaltation; so much so, indeed, that many of the ancient prophets would, doubtless, have been consigned to a lunatic asylum had they flourished in modern Britain in place of ancient Palestine. While amidst the deficiencies of the latter, we may often detect the animal instincts in a state of activity and predominance, normal only on a lower plane of being; but here so far united with a certain measure of human intelligence, that we may obtain additional knowledge of their essential character by the insight occasionally afforded through this exceptional combination. Hitherto these phases of mental obscuration have been regarded almost solely from the standpoint of modern medical empiricism, careful only of the cure, and regardless of the psychology of the case, as compared with its pathology,—to the disadvantage, perhaps, even of the latter, for shallowness and superficiality are seldom the most assured roads to success, even in matters practical.

But extensive as our survey may have seemed, and manifold as are the various provinces of inquiry we have enumerated, they by no means embrace the entire domain of psychology, which, like anatomy, boasts of the comparative among its other departments. What are the psychological specialities of the various races of men? How are they differenced by their respective passionai, affectional, moral, and intellectual endowments? To what extent do they vary in their aptitude for art, in their ability for science, in their talent for literature, and in their capacity for government? Are these diversities inherent and unalterable, or merely the passing effect of casual circumstances? To what extent are they connected with and dependent upon organic specialities, and how far are they the expression and reflection of telluric and climatic influences, acting with the steadily accumulative force acquired by hereditary transmission through many successive generations?

It need scarcely be said that to answer these queries satisfactorily, we shall need to define what man is, contemplated psychologically. And to accomplish this, comparative psychology must embrace the entire animate scale, with all its diversified classes, orders, genera, and species of sentient being. What is a brute? How does he differ from a man? By what process of subtraction shall we define his lower place in the great scheme of conscious existence? Are his specialities reflected in his organisation? From the worm to the lion, is brute mind emblemed in brute structure; and if so, shall we ever prevail to read it off with precision? Are the teeth and talons of the tiger simply its ferocity and cruelty, ultimated in predatory instrumentalities? Is the dove a fair embodiment of love and gentleness? and are opposite qualities equally reflected in the structure of the eagle and the falcon? This, again, brings us back to the connexion between mental aptitudes and organic conditions, a problem whose solution must, as we have said, embrace the various races of men as well as the different species of animals.

Now, it must not be supposed from what has been just said that I would have you enter upon the investigation of all these subjects at once. They embrace problems whose solution will probably demand the labour of many generations. But it is well that, while devoting ourselves to special departments of inquiry, we should not wholly lose sight of the vastitude of the area which extends before us, and whose effective illustration will doubtless tax not only our energies and resources, but also those of our successors. But it is a noble field, and will amply repay whatever labour we may bestow upon it; and although, whether as individuals or as an association, we can only hope to contribute an insignificant fraction, "the widow's mite," to-

wards the great fund of knowledge which is being slowly accumulated on this subject, still it is our duty to make this offering; nor can we doubt that in the effort to accomplish it, we shall have our reward in those habits of more accurate observation and of profounder thought, to which our labours, as experimental psychologists, can scarcely fail to prove the precursors.

THE PHYSIOLOGY OF THE BRAIN.

To the Editor of the Anthropological Review.

SIR,—In your last number, in a notice of my pamphlet on the “Science of Man,” you say, “Mr. Bray seems in a dreadful hurry that every one should believe as he does; he seems to be one of the few remaining mongrel philosophers who believe in Spurzheim as their god, and George Combe as his prophet. . . . We are sorry for Mr. Bray; if he could only get phrenological jumble out of his blood he might yet write wisely. Mr. Bray asserts, ‘the bridge between physics and metaphysics has been found.’ By whom? this we are not told.” Now, Sir, will you allow me a short space to show why I cannot get “phrenological jumble out of my blood,” and why “I am in a dreadful hurry that every one should believe as I do”? In my book, “Force and its Mental Correlates,” I have shown that mind is a correlate of the physical force, and that thus metaphysics is necessarily based on physics; but I claim no merit as a discoverer, and Herbert Spencer and others have been before me in the same field. Herbert Spencer says, “that no idea or feeling arises, save as the result of some physical force expended in producing it, is fast becoming a common place of science.” But to this subject I shall be glad to return, if you will allow me, on a future occasion; at present I will confine myself to the other questions.

I think these may best be answered, if your readers will excuse the apparent egotism, by a short account of my “conversion” to phrenology, and my “experiences” since. Surely the life-experience of a really earnest man, who is not a “professional” anything, must be of some interest, and perhaps of some value to those who care for the truth only. I started with as strong a prejudice against phrenology as any of your present readers can possibly have. I was well up in the old and modern metaphysicians, and in my young conceit I regarded the new pseudo-science as unworthy of notice; in fact, beneath contempt. In the spring of 1835, exactly thirty-four years ago, I was staying in

the Isle of Wight, and engaged in writing some lectures on education for our Mechanics' Institution; I had occasion to send to town for Combe's *Physiology*, and by some mistake, which I could not account for, the publisher sent me Combe's *Phrenology*. Having nothing else to do I began to read it; I soon got interested, and before I had read far my prejudice was gone, and I wished phrenology might be true, as its list of faculties and its mental system were so much more complete and perfect and practical for educational purposes than those with which I was then engaged. I threw my educational lectures into the fire, for I saw I had to begin again, and my "Education of the Feelings," now in its third edition, was the result. In this work I give the use and abuse of each faculty, and endeavour to show how each may be best trained and cultivated. But I became very anxious to know what truth there was in the organology of phrenology, and I accordingly hastened off to town, had my head shaved, and got Mr. Deville, of the Strand, to take a cast, to be examined by myself at my leisure, to see how far what phrenologists might have said of it corresponded with what I knew of my own character. Of course, as I discovered afterwards, it was not necessary to have my head shaved, and I merely mention it to show that I was in earnest. I have no doubt you, Mr. Editor, or some of your readers, would think it a very desirable, if not a necessary thing, to do on my own account, and you would probably look with some interest at the cast to find the crack. I also purchased of Deville one hundred casts of heads, which contained illustrations of all the organs, both fully developed and small. I must confess that at first I had some difficulty in being able in all cases to see this difference, but I never missed an opportunity of examining every head that I could get at where I knew anything of the character. After three years I had verified much of what phrenologists considered established. But my principal difficulty was with the forehead, "the straightened forehead of the fool." I had found most of the organs both large and small, and functions in accordance, but I repeatedly found, particularly in ladies, what appeared to be very large foreheads, without a corresponding amount of intellect; in fact, with very foolish people. Hitherto I had no personal instructor, I had followed Gall's method; wherever I heard of any peculiar talent, any mental or moral characteristic, I examined the head—but, fortunately for me, about that time (1838), George Combe, who was lecturing at Birmingham, came to stay with me, and I mentioned my difficulties about the forehead to him. He wished me to get some skulls; I selected a large handkerchief-full from a heap, I will not say where, but none of their original owners have since applied for them. We sawed them in two, and he showed me that the part of the brain connected with the intellect was that which

lies upon the supraorbital plate, of which the forehead, particularly in women, as seen in front, was a very imperfect and often delusive indication, as the hair in some people went back almost to the middle of the head, the bald part showing a forehead; and where the intellect was very shallow the forehead was often very high, as it then included the feelings in the moral region above it. He taught me how to measure the size of the supraorbital plate, and of the anterior lobe which lies upon it; and thus, aided by George Combe's experience, my difficulties in that and in some other directions vanished.

You speak, Sir, in one of your annual addresses, as President of the Anthropological Society, of Mr. George Combe as an enthusiast: he was, I think, the most cautious Scotchman I ever knew; his cry was always for facts, facts, facts, and he would listen to no theories, however plausible, without. He was one of the very last men to make "assumptions," or to accept "erroneous inferences." He perhaps paid too much deference to public opinion, keeping some things back lest the public should not accept others; but I am quite unable to appreciate, or even to understand, the difference you seem to wish to make between Gall, and Spurzheim and Combe. I have all their works, and have read them carefully more than once, and certainly Combe's last and fifth edition of his *System of Phrenology* contains all the discoveries of the other two, and much more. As to diversity of opinion on the question, as to whether the brain is the organ of a separate entity called the mind, or the mind is a function or power of the brain, I think such differences ought not to separate us from all the facts that have been collected and recorded, and from the very useful inferences that have been drawn from them. Neither do I think the name by which we shall agree to call this collection of facts and inferences of much importance, whether Encephalonomy or Phrenology. I prefer the latter certainly, not only because it is easier to pronounce, shorter, and more generally known, but because it is really with the mind, and not the brain, that we have to do. Whatever we may *infer* with respect to the brain, and matter, and forces outside ourselves, and the way in which they may create and act upon our consciousness, it is that *consciousness* only of which we *know* anything. The objects of knowledge, in reality, are ideas, not things.

But to return to my own experience. I believe I was able to verify most of the separate "functions of the brain," said to be established by phrenologists. I do not mean to say that each of the thirty-six orthodox organs were simple or primitive in their functions, but that the functions ascribed to that particular part of the brain, whether simple or complex, belonged to it; the American phrenologists have subdivided the organs into about one hundred, with how much truth

I cannot state ; neither do I mean to confine the organs to thirty-six ; Mr. H. G. Atkinson has made discoveries of organs lying within the falciform process, and I think I have discovered two or three on ground yet unappropriated, besides the discovery at once, from the shape of my own cast, that the organ called by Spurzheim Inhabitiveness, and by Combe Concentrativeness, is in reality two, and both gentlemen were right. The eye gradually educated itself, so that differences in the shape of the head, at first unnoticed or seen with difficulty, became evident at a glance ; the same as in a good judge of horse-flesh, the eye falls at once upon the different points and muscles required for the different services. The simplest division of the brain is into animal, moral, and intellectual faculties ; a less simple, but equally recognisable one, with a little experience, is into the social, the self-protecting, the self-regarding, the moral, the religious, the æsthetic feelings, and into the perceptive and the reflective faculties. These divisions the eye of the practised phrenologist recognises at once, and with a little closer attention the modifications and combinations.

Let a student begin with the simplest. Take a line from the angle of the eye and see how much the forehead hangs over the face as a measure of the anterior lobe, the general intellect ; next, let him rest his hands on the top of the ears and bring the thumbs to meet at the upper part of the forehead ; the portion of the brain above that is connected with the moral region ; and the part behind the ear and in front of it at the base of the brain, is connected with the animal feelings. A good shaped head, measured from the opening of the ear upwards, should be as high to the top as it is broad across or between the ears, and it should be square at the top ; if it slopes too rapidly on each side it shows firmness large, and conscientiousness less so, and firmness may be equally the servant of the lower as of the higher feelings. Our most respectable and highly intelligent superintendent of police I found had long been a phrenologist without knowing it. In choosing his men he said he rejected small heads, and chose over-hanging foreheads and high heads, as far removed as possible from the criminal type, with which he seemed to be perfectly familiar. Even the knowledge so far gained of character is of the highest importance. Breeding, education, and the reticence now the great and almost universal characteristic of good society, make it as difficult to judge of character under this smooth and smiling surface, as it is to realise the storm at sea under the calm blue sunshine and gentle ripples of the wave upon the shore. A well educated man, with no higher feeling than a desire to please, can reflect, or assume for the time, any character that the society he is then in requires and most values, whether of high or low feeling ; but follow that man home and you find a mere selfish animal. The highest

virtues are often the quietest and the most retiring, and the spiritual faculties are out of place and invisible in the world at large, and the garb and language of them can be put on for the time and for a purpose by the most selfish ; but the least experienced phrenologist sees at a glance the kind of man he has to deal with, which knowledge is only acquired by others on more intimate acquaintance. Alas, *that* knowledge with too many comes too late ! I distinguish at once the selfish from the unselfish ; the affectionate from the cold-hearted ; the proud, and vain, and boastful,—all whose geese are swans—from the modest and retiring ; I know at once the man who is in a constant state of opposition and turmoil, and who fancies all the world is quarrelling with *him* ; the revengeful and vindictive ; the desponding or hopeful ; the open or reserved ; the coward or the brave ; the miser and the book-worm ; the kind, the courteous, the conscientious, and the firm ; the credulous or the sceptic ; the poet and the wit ; the man who, with a great spiritual and poetical sense, and feeling out of harmony with the world around him, is as great a mystery to himself as to the people on a lower phase of feeling beneath him ; &c., &c.

Then as regards the intellect. As we have calculating boys, with a large organ of number, so other faculties may be as abnormally large, and give special talents, or they may combine and give special genius, or they may be all large, with active temperament, and give universal genius ; so, again, in deficiency ; one person in eighteen, Sir David Brewster showed, could not distinguish some colours from others, and about one in eighty was colour-blind ; not from defect in the eye, but in the brain. And it is the same with all the other mental faculties ; they may all be similarly deficient, and this constitutes idiocy ; if deficient only in some particular faculties, that is partial idiocy. A person may be as blind, or incompetent, in the reasoning powers from deficiency of brain as in the perception of colour, but what is very extraordinary is that people very rarely find out their own shortcomings in this respect, and a good memory for facts and events, and a good talking power too often hide them from the world ; and we have people with small brains, much talk, and little judgment, placed in high places, to the infinite damage of the widest interests. I maintain, after an experience of more than thirty years, that whatever may be the deficiencies of phrenology—and doubtless it is at present anything but a perfect system—it enables us to see these things at a glance, and we know at once the kind of man we have to deal with, so that a wise man may look upon the world as a sort of zoological garden, where every animal has to be fed and treated according to its nature.

Surely this is the most valuable of all knowledge, and you ought not to be surprised if I am in "a dreadful hurry that more people should believe as I do;" that there were more "mongrel philosophers" with my experience; and that I am a little impatient that anthropologists should be confining their researches to dead matter and mere bodily characters, instead of living mental functions. Beauty and harmonious development of the brain are now inseparably connected in my mind; and your cautious induction, Mr. Editor, on the special faculty of language, with Dr. Bouillaud's "Observations and Experiments," appear to me *just the same* as if from careful examination of the structure of the eye, and pathological observation, and the use of the ophthalmoscope, you had just discovered that its probable function was to see with; that is, the left eye, but by no means the right. I have no objection to begin *de novo*, if we are not called upon to give up what we do know, and if our knowledge by thus beginning again can be made more definite and certain. But we must use Gall's method, which is to judge of mental function or power from what it does; we know that we see with our eyes, and we have not learned that fact from cutting up the eye, or from blind people, although anatomy and pathology may sometimes tell us why some people cannot see. We know equally well that a particular position of the eye-ball indicates what is vulgarly called the "gift of the gab," that is, it indicates good verbal memory, or facility in associating words or names with ideas. We know that this position of the eye-ball is owing to an indentation in the supraorbital plate caused by the abnormal size of a convolution of the brain. No doubt we have still much to learn about this faculty, and verbal memory may be its primitive function, but its manifestation or mode of action depends very much upon its association with other mental powers. Granting that there is the power I have indicated of judging of character, and I do not think I have been deceiving myself all these years, no doubt you are prepared *fully to admit* its great utility. It enables us to choose our servants and assistants in all departments; and I have always been, with one exception, the particulars of which it is not necessary to mention, well served, because I have been able to put the right man into the right place. I have done more—I have been able to start at least half-a-dozen young men in the direction that nature had *specially* intended them for; I took the square pegs out of the round holes, and in each case with complete success. It has enabled me also to choose my friends, for we know at once, and not by too often painful experience, upon whom we can implicitly rely, or whose friendship or principle is sure to break down under pressure.

But phrenology is not only practically useful wherever man is con-

cerned ; it not only, by the very general admission even of those who deny its organology, presents the best system of mental philosophy, but it seems to me to furnish the key to all those deep metaphysical problems upon which mankind have hitherto been so hopelessly divided. It shows how part has been added to part in the brain as we rise in the scale of animal power and intelligence, with varied function in proportion to increased complexity of structure. It shows exactly how, and by the aid of what faculties, the world is created within us ; and not only the physical world, but, through our likes and antipathies, the moral world also. As the fly, with its microscopic eye, and thousand lenses, is thus enabled to live in a world of its own, so the addition of a single mental faculty in man might place him in a very different world to that in which he now lives ; for he knows of the world only as it acts upon him, and there may be thousands of influences that never reach his thick and limited perceptions. "There are," says Professor Tyndall, "numberless waves emitted by the sun and other luminous bodies which reach the retina, but which are incompetent to excite the sensation of light. If the lengths of the waves exceed a certain limit, or if they fall short of a certain other limit, they cannot generate vision ; and it is to be particularly borne in mind that the capacity to produce *light* does not depend so much on the *strength* of the waves as on their *periods of recurrence*. I have often permitted waves to enter my own eye of a power which, if differently distributed, would have instantly and utterly ruined the optic nerve, but which failed to produce any impression whatever upon consciousness, because their periods were not those demanded by the retina." (*The Fortnightly Review*, Feb. 1869.)

But I cannot now pursue this part of the subject ; perhaps you will allow me at some time to return to it. Let us rather take one or two of the practical questions that are now before the world, and view them by the light that phrenology throws upon them. Let us take the Civil Service competition examination. It may be quite right that no one should be employed who is not sufficiently well informed to pass such an examination, but to employ men *because* they pass is exceeding folly, as such an examination furnishes no test of *character* whatever. It does not even correctly measure the intellectual power ; for a person may be as blind in judgment as some are in the power of seeing colours and yet pass such an examination. With the faculty of language, and of simple and relative perception, well developed, a person may be easily crammed to pass such an examination and yet be weak in body, idiotic in reflective power, and altogether deficient in the moral sense. Supposing that even an examination tested the whole intellect, instead of a few faculties, great intellect is too often at the

expense of bodily and vital power, and its possession gives no guarantee as to how it will be used. Such an examination is as likely to furnish only a clever rogue, as an honest, persevering, good man ; and yet how the world chuckles at its wisdom, and congratulates itself on its great advance in this department !

The *Pall Mall Gazette*, commenting on the result of this system, now in operation for the last fourteen years, says (April 27, 1869), with reference to the Civil Service clerks : "Some, of course, had been inordinately crammed, and have found their level ; others were shady characters, and went (as the Bishop of Cork would say) to the — ; but the greater proportion at once showed themselves to be intelligent, educated young gentlemen, ready for anything that might be put before them, and eager for work." No doubt, *ready for anything*,—at least, there is no reason in their examination why they should not be ; still, this little glimmer of common sense has proved to be better than the previous system based on jobbery.

Let me give one more illustration. I have shown that in proportion as the animal, moral, or intellectual region of the brain predominates, do we get a man or a mere animal. If the intellect and moral region predominate, we have a man who is ordinarily a "law unto himself," and who, if he falls into crime, does so inadvertently or under strong temptation. If the three regions are equally developed, the man will depend upon education and the circumstances, favourable or unfavourable, in which he is placed ; if the animal region decidedly predominates, we have a brutal animal ; if the animal region and intellect, often a clever rogue ; but in either case, when at large, always preying upon society. Now, in February, 1836, Sir G. S. Mackenzie petitioned Lord Glenelg, then Secretary to the Colonies, that the knowledge we have upon the subject might be used in the classification of our criminals. "At present," he said, "they are shipped off, and distributed to the settlers, without the least regard to their character or history." "There ought," he said, "to be an officer qualified to investigate the history of convicts, and to select them on phrenological principles. That such principles are the only secure grounds on which the treatment of convicts can be founded ; proof may be demanded, and it is ready for production," etc. In a separate letter, Sir George said, "men of philosophical understanding and habits of investigation have been brought to perceive that a discovery of the true mental constitution of man has been made, and that it furnishes us with an all-powerful means to improve our race. . . . Differences in talent, intelligence, and moral character, are now ascertained to be the effects of differences in organisation. . . The differences of organisation are, as the certificates which accom-

pany this show, sufficient to indicate *externally* general dispositions, as they are proportioned among one another. Hence, we have the means of estimating, with something like precision, the actual natural characters of convicts (as of all human beings), so that we may at once determine the means best adapted for their reformation; or discover their incapacity of improvement, and their being proper subjects of continual restraint, in order to prevent their further injuring society. . . . And if, as thousands of the most talented men in Europe and America confidently anticipate, experience shall convince you, your Lordship will at once perceive a source from which prosperity and happiness will flow in abundance over all our possessions. In the hands of enlightened governors, phrenology will be an engine of unlimited improving power in perfecting human institutions, and bringing about universal good order, peace, prosperity, and happiness."

This petition was backed by a whole bookful of certificates, principally of celebrated medical men, and many of them quite equal in scientific eminence to any of the professors of the present day; among whom are Sir W. C. Ellis, M.D., Dr. C. Otto, of Copenhagen, Dr. Joseph Vimont, of Paris, Dr. Wm. Gregory, F.R.S.E., Dr. Whateley, Archbishop of Dublin, etc., etc.; and yet this is now quite forgotten, and we have a generation brought up in ignorance of phrenology, and taught to despise it; and we have our *Anthropological Journal* declaring that "the present system of phrenologists, with all their assumptions and erroneous inferences, will soon become a theory of the past;" and we find its really talented editor groping about, *like a blind man*, after the very first organ that Gall discovered.

About the same time (April 1836), George Combe was a candidate for the chair of Logic in the University of Edinburgh, and he also has printed a whole volume of testimonials from the leading men of the age, not only in this country, but in Europe and America, who certify—

"That phrenology, viewed as the abstract science of mind, is superior to any system of mental philosophy which has preceded it.

"That it contains a true exposition of the physiology of the brain.

They also certify "to its application in discriminating the varieties of insanity.

"To its bearing on the classification and treatment of criminals.

"And to its application to the purposes of education."

What an extraordinary hallucination must, then, have seized the educated and scientific world at this time, Mr. Editor, if phrenology be what you now describe it? Sir William Hamilton was chosen on that occasion, and not Mr. Combe, and I do not hesitate to say that the mental and moral philosophy of the world has been put back at least a quarter of a century in consequence.

Of course, the prayer of Sir George Mackenzie's petition could not be granted. What would all the parsons have said to the doctrine, that "differences in moral character are now ascertained to be the effects of difference in organisation"! What becomes of freedom of will and responsibility, on that view! We should have required a new system of ethics, based on the fact that mind is as much the subject of law as matter,* and that that is free, as defined by Spinoza, "whose action is determined by itself (whether that self be in its nature good or bad), and not by another." We must have laid aside our notions of retributive justice, and have been obliged to admit that no punishment is just that is not for the good of the individual offender; and that this being the case, nature's punishments are the same whether our actions are voluntary or involuntary. In fact, we should have been obliged to make precisely the same reforms in our criminal system and in our gaols as we have, during the present century, effected in our lunatic asylums, and on precisely the same principles. But society was not, and is not, prepared for this.

There are many reasons to assign for the present position of phrenology in public estimation. The first, and I have no doubt the strongest of all, is the *odium theologicum*; for there is no denying that its doctrines are opposed to the popular theology; theologians have, therefore, talked of its materialism, and have given it a bad name. It was George Combe's attempt to hide this that brought his favourite science and himself into disrepute and disfavour among the class of men who ought to have been the first to acknowledge the merits of both.

There is also much in what you say, that "Gall's theory, if true, unmasks all impostors. No man appears to a disciple of Gall other than he is; and this is utterly repulsive to some men of high scientific and social position." This is true also, because a very small brain and limited intellectual capacity are quite compatible with "high scientific and social position;" and there is also a very large class—people with large secretiveness—who instinctively hate to have the internal workings of their mind, their thoughts, and feelings, and capacities, dragged into the light. There is also, as you say, much in the odium brought upon it by some of its English disciples. Incompetent and uneducated professors make a trade of it, and profess to give characters from a shilling a head upwards; and although there is no reason why a properly qualified person should not practise phre-

* In my *Philosophy of Necessity* I have endeavoured to present a system of ethics based on this fact, and to show that we have no cause to fear for the interests of virtue and morality, which are based upon laws as fixed and determinate as the law of gravitation.

nology as a profession, quite as much as a medical man, and with more benefit to the world, yet there is no diploma, and the quacks predominate. Scientific men of position dread to be associated in any way with this sort of thing; but what most influences them, I have no doubt, is that phrenology is what Professor Masson describes it, "a science of mind made easy." When once discovered, like many other great truths, it is very simple; and men of science are looking for that which is abstruse and difficult, and not for that which every fool could understand. They therefore prefer metaphysics, where each man can have his own system, which neither he himself nor any one else can understand. We have, perhaps, all heard of the celebrated watch of a certain railway official, who would remark, on consulting it, "If the sun is not over the hill in a minute and a half, he'll be late." I have noticed that most scientific men are blessed with a watch of this kind, that tells the time in mental science so correctly, that all facts that do not come up to its time are beneath their notice.

I have to apologise for the length to which this paper has unpremeditatedly extended, and for its personal tone; but I have given it this form purposely, in the hope of inducing people to follow my example, and to examine phrenology in the way I have done, for themselves, uninfluenced by public opinion, which, in this instance, would mislead them. If they will do this, I feel certain that they must come mainly to the same conclusions. I do not know a single person who, upon such careful examination, has rejected them. The objections that are ordinarily brought forward about the frontal sinus, want of parallelism in the external and internal lobes of the skull; the hardness of the skull, as preventing expansion of the brain; difference in temperament or quality of brain; hereditary tendencies and transmitted mental aptitudes, etc., have no practical weight, and present little or no impediment in practice. The temperament, or the degree in which the muscular, cellular, vital, or nervous systems predominate, is the most serious difficulty; but the experienced phrenologist knows as well what degree of activity of brain to expect, as the experienced physician is able to judge of the action of other parts of the bodily system, both in health and disease, from the complexion. If people will study the subject, it will amply repay them. Let them begin with Gall "On the Functions of the Brain, and of each of its parts; with observations on the possibility of determining the instincts, propensities, talents, and the moral and intellectual dispositions of men and animals, by the configuration of the brain and head." Spurzheim's works will be found invaluable for their plates of the brain of man and animals, and other illustrations of development; and George

Combe's fifth and last edition of his *System of Phrenology* contains all that is required for ordinary study of the subject. In the twenty volumes of the *Phrenological Journal* will be found a full discussion of the whole question from its first introduction into this country, with precisely the same objections, and the answers to them, as in the present day.

Coventry, May, 1869.

CHARLES BRAY.

THE ORIGIN OF THE ENGLISH.—PIKE *v.* NICHOLAS.

A MOST important trial to British Anthropologists, and to literary men in general, has been recently decided in Vice-Chancellor James's court. The case of Pike *versus* Nicholas had been, for several months previous to the trial, known to be one which produced the greatest interest, and when, on the 27th of April, the cause commenced, a large number of Fellows of the Anthropological Society, and many celebrated literary men, were in court.

Mr. Grove, Q.C. (late President of the British Association for the Advancement of Science), and Mr. Jemmett, were for the plaintiff; Mr. Kay, Q.C., and Mr. Osborne Morgan, M.P., for the defendant.

Mr. Grove, in his opening address, gave an outline of the history of the suit. Mr. Pike, he said, had been an open scholar of Brasenose College, Oxford, and had passed through the usual stages up to the degree of M.A. He had been called to the bar in 1864; but, instead of practising, had devoted himself to literary and scientific pursuits, and especially the study of Anthropology in its various branches. He had, as early as 1858, made some jottings for the philological portion of his work, *The English and their Origin*; he had collected various materials bearing upon the subject, in many of its aspects, before the year 1864.

In the autumn of that year, there appeared an advertisement offering a prize of one hundred guineas for the best Essay upon the *Origin of the English Nation*, in English, Welsh, French, or German. The money was to be paid partly by Mr. Arthur Johnes, and partly by the National Eisteddfod. Mr. Pike, after some correspondence, in which he stated that he had already collected materials for the work, agreed to compete, on condition that, if unsuccessful, his MS. should be returned to him. Eleven essays were sent in on the 1st of March, 1865, and the decision of the judges was made known in the autumn of that year. The judges were Prince Lucien Buonaparte, Mr. Arthur Johnes, and the Rev. Basil (now Archdeacon) Jones. The last mentioned gentleman expressed high approbation of Mr. Pike's work as "a remarkable production;" hoped that it would be published, and would receive the prize, and declared that no other essay was worthy of consideration, or possessed any originality. Mr. Arthur Johnes also declared Mr. Pike's essay to be the best; and though he differed from its conclusions, thought that it

would be for the benefit of science that it should be published. Prince Lucien Buonaparte, without giving any opinion on the relative merits of the competing essays, declined to enter into arguments which were not philological, and [Mr. Pike having spoken somewhat slightly of Philological Ethnology] recommended that the prize should not be awarded. In the official report of the Eisteddfod, it was announced that Mr. Pike's claims were not set aside, but only deferred, and that the prize was offered again for the following year. Mr. Pike, however, did not see fit to accept this invitation, or to change his matured opinions in accordance with the opinions of those who differed from him. He spent some months in revising and correcting his work, and published it in May, 1866.

Dr. Nicholas was a competitor, under the name of "Multis Unus", in 1865 (when both Mr. Basil Jones and Mr. Arthur Johnes pronounced his work to be the second best), and again in 1866. It appears that in the latter year, the essays were not sent in until the 2nd of July, some time after the publication of Mr. Pike's book. Dr. Nicholas's *nom de plume* was, on this occasion, A. B. C. Z., and the judge was Lord Strangford. The latter, in his adjudication, referred to the appearance of Mr. Pike's book, and assigned that as a reason for again withholding the prize. The plan, arrangement, and some of the matter of A. B. C. Z.'s essay he mentioned in laudatory terms; but added significantly, that it was "typically second-hand," and that the world would lose little, if it never saw the light.

In July, 1867, Mr. Pike received a letter from Mr. C. Carter Blake, enclosing a prospectus issued by Dr. Nicholas, and calling his serious attention to the extraordinary similarity between the language and arguments in it and in Mr. Pike's book. The book, for which subscriptions were asked in this prospectus, was published in the beginning of 1868, under the title of *The Pedigree of the English People*. The plaintiff first became aware of its publication when he was requested to review it for the *Anthropological Review* in March, 1868,—both Mr. Pike's and Dr. Nicholas's book, it should be observed, were published by the firm of Longmans,—and after some correspondence and an interview with Mr. Wm. Longman, consulted his solicitors. They advised him to file a bill, and obtain an order for the production of Dr. Nicholas's MSS. of 1865 and 1866, as well as of the MS. from which Dr. Nicholas's book was printed. This was accordingly done; and the plaintiff's case rested, therefore, not simply on the two books, but also upon the indicia of the MSS.

The plaintiff's charge was that nearly the whole of the argument contained in the third portion of the defendant's book, was copied from, and a piracy of, the plaintiff's book; and that the defendant had made an unfair and illegitimate use of the plaintiff's book, so that the book of the defendant did not constitute, as it professed to do, an original work.

Mr. Grove then proceeded to comment upon the identity in plan of the two books. The two plans were set out in the plaintiff's bill in the following manner:—

Plan of the Plaintiff's book.

CHAPTER I.

The Historical Evidence.

*Plan of the Defendant Thomas
Nicholas's book in Part III.*

CHAPTER I.

The Historical Argument.

CHAPTER II.
The Philological Evidence.

CHAPTER II.
The Evidence of Philology.

CHAPTER III.
Same subject continued.

CHAPTER IV.
Development of Early English
Law.

CHAPTER III.
The Evidence of Physical
Characteristics.

CHAPTER IV.
The Evidence of Psychical
Characteristics.

CHAPTER V.
Sec. 1. Evidence of Physical
Characteristics.
Sec. 2. Evidence of Mental and
Moral Characteristics.

MR. KAY here interrupted with a remark, that he should have something to say about the manner in which those parallel plans had been drawn out; but for the present he would only observe that the words "Mental" and "Moral" were different from the word "Psychical", which the defendant had not used.

MR. GROVE said his learned friend might possibly discover, before the case was concluded, that the defendant had used that word "Psychical"; but for the present he would content himself with calling attention to some of the most striking instances of verbal similarity, though these of course did not constitute the substance of what he relied on. He would begin with the criticism of Gildas in the two books, and in the defendant's prospectus.

We give these passages in parallel columns:—

Plaintiff's book, p. 21.

"Gildas is the only authority an Englishman can appeal to. Who, then, was Gildas?"

The latter sentence also appears at p. 20.

Plaintiff, p. 16.

"A necessary part of a child's education."

"A Cambridge Professor of History does not scruple to dilate upon the merits of our Teutonic race."

Pike, p. 23.

"Allowing, then, that Gildas, no matter who he may have been, lived in the sixth century, we come to our third and most important question, How far may we trust him?"

Plaintiff, p. 25.

"It is impossible to glance either at 'the history' or at the 'epistle' without coming to the conclusion

Defendant's Prospectus.

"Gildas is the great original authority.

"But who was Gildas?"

Defendant, p. 245-6.

"This belief, instilled to this day alike into the child's mind in the nursery, and the student's mind in the lecture-room."

Nicholas, p. 252 and 250.

"But allowing that Gildas was an authentic person, the author of the *Excidium Britannie*, how far is his book an adequate authority for the belief founded upon its representation?" P. 252.

Defendant, p. 258.

"It is utterly impossible to receive his statements as anything else than the splenetic exaggerations of an ill-

that the author's mind was in an un-informed and prejudiced monk. healthy condition.

Mr. GROVE, after reading these passages, said there was not only identity of words, such as he had pointed out, but identity of argument, identity of quotations, identity of purpose, for which the criticism was used; and the same phenomenon ran through the whole of the passages, of which complaint was made, in the defendant's book. There was a series of curious coincidences which it was impossible to explain according to the law of probabilities, except on the hypothesis that one book had been copied from the other. The whole of the passages upon hair-colour, and skull-form, had been taken, he submitted, by the defendant from the plaintiff, and he would give some curious instances of verbal agreement in illustration.

Pike.

"And now let us ask, Are the English a fair-haired people? Can it be said that 90 per cent. of them are fair-haired? Most certainly not." P. 132.

"The second hypothesis is, that a preponderance of Cymric blood in the invaders, who came from the Cimbric Chersonese and its neighbourhood, may have caused, wholly or in part, that resemblance which is to be traced between the ancient Britons and the modern English." P. 243.

"To Greek and Roman eyes, the Germans did certainly appear, in general terms, to be all light-haired. There is no evidence whatever on the opposite side. But if we suppose the Greeks and Romans to have been generally dark-haired, and to have regarded fair hair as a rare and very great beauty, they would necessarily have been very much struck by a proportion of light hair among the Germans, greatly in excess of that which they found among themselves." P. 138.

"As in the case of the Germans, so in the case of the Celts; we must believe no more than that the eyes of the Romans and Greeks were struck by the greater proportion of fair hair among the Celts than among their own people. But there is reason to believe that they were less struck

Nicholas.

"But now comes the question, Do the English people, who are said to have descended from those ancient Germans, display these same characteristics of race? Are they prevalingly blue-eyed and red or yellow-haired?" Nothing of the sort. P. 506.

"We do not question but that this junction may, to some extent, have taken place in the Cimbric Chersonese; probability lies strong in favour of such a supposition." P. 522.

"Let us premise that it is more than probable that the Greeks and Romans, to whose writers we are indebted for certain minute descriptions of the personal characteristics of the ancient Teutons and Celts, were themselves of a prevalingly *dark* complexion. Hence it is that, according to the usual rule of setting a high value on that which is rare, they took especial notice of the light or 'yellow' hair of the Germans, and of the less light hair of the Gauls and Britons, as a feature of comeliness." P. 502.

with this phenomenon among the Celts than among the Germans." P. 147.

"That dingy hue, neither light nor dark, which is very common among Germans." P. 139.

From p. 158 to p. 178 Mr. Pike discusses skull-forms.

From p. 172 to p. 176, Mr. Pike considers the Greek head-form, because it illustrates some of his previous and subsequent arguments.

Mr. GROVE went on to remark that, in addition to the piracy of whole sections of the book, the defendant had filched a number of arguments and illustrations, which he had scattered about in various portions of his printed work. He dwelt especially upon an instance of this in the preface, where each author quite unnecessarily goes into a discussion, and takes exactly the same view of the question of classical orthography. Of still greater importance, however, was the fact that Dr. Nicholas had copied Mr. Pike's blunders.

The following parallel passages were important in many ways:—

Pike.

"Livy, too, describes the Gauls as having *rutilatæ comæ* (reddened hair, or hair made light), not *rutilæ comæ* (red or light hair)." P. 148.

Nicholas.

"Livy writes that they [the Gauls] had not *rutilæ comæ* (red hair, but *rutilatæ comæ* (reddened hair)" p. 514, and again, p. 515.

In this last passage, both plaintiff and defendant appeared to have fallen into a very remarkable error. Both gave Livy as their authority; but Dr. Nicholas had omitted to mention Livy in his list of authorities. The passage in question was a speech of Cn. Manlius, intended to encourage Roman soldiers who were about to engage the Galatians. "The Galli," he says, "have the most warlike reputation of all the Asiatics. They may have the *rutilatæ comæ*." But, he goes on to explain that wherever a colony has settled under similar circumstances, it has been absorbed by the native population. "These men," he says, "are no exception; they are a mixed breed and degenerate; they were but Phrygians with the arms of Gauls." They did not, therefore, prove the point which both Nicholas and Pike were attempting to prove.

There was an excellent instance of copied blunder, and of blunder aggravated by copying, in Nicholas's list of works consulted (p. 9); he had "Blumenbach (J. Fried.) *Decades Craniorum*, Göttingen, 1828." (Mr. Pike had in his list of works consulted (p. xv), "Blumenbach (Johann Friedrich) vi *Decades et Nova Pentas Craniorum*, Göttingen, 4to, 1828.

There were no *Decades Craniorum* published by Blumenbach in 1828. In order to divert suspicion, Dr. Nicholas had omitted the *Nova Pentas* from his list, and this, strangely enough, was the only portion of Blumenbach's collection published in 1828. The *Decades*, to which alone Dr. Nicholas refers, were published at intervals ranging between 1790 and 1820. Mr. Pike, in giving the date of the whole collection (including the *Nova Pentas*), ought

to have written 1790-1828. Dr. Nicholas (excluding the *Nova Pentas*) ought to have given the date as 1790-1820. He was content to copy Mr. Pike, and went entirely wrong. Even in writing the author's name, Dr. Nicholas had copied an inaccuracy of Mr. Pike's. The work is in Latin; the titlepages of of each decade are also in Latin, and the author's name appears thus,—“Jo. Frid. Blumenbach.” Mr. Pike gave the name in German,—“Johann Friedrich”,—not according to the titlepage. Dr. Nicholas likewise introduced the letter *e* into the second name, after the German fashion, and wrote it “J. Fried.”

There was another instance of a blunder of the Plaintiff copied by Dr. Nicholas at p. 498. He referred vaguely to “Our Population Abstracts”, published by direction of government; while Mr. Pike referred to “The Population Abstract” published in 1843 (Census 1841).

Mr. Pike, though he neglected to ascertain the results of the census taken in 1851, and of that taken in 1861, nevertheless carefully expressed himself in the past tense [“were born”]. Dr. Nicholas, however, in the hope of concealing his plagiarism, had changed the tense [“are born”]; and thus, by referring to “Population Abstracts” in general, implied that he had consulted those of more recent date. Now, had he looked at the return of the Census taken in 1861,—which is easily accessible, far more easily than that of the Census taken in 1841,—he would have been under no necessity to take the counties of Surrey and Middlesex, but would have found a table (to which reference is made in the Contents) giving the percentage of those persons inhabiting London who were born in London itself.

Mr. GROVE then commented on the case as a whole. He said it was a case of cumulative circumstantial evidence,—a case in which all the circumstances fitted into one theory, and could not be made to fit into any other. There was exactly the same plan, exactly the same line of argument, exactly the same illustrations, and, in many cases, an exact agreement in verbal expression. The chances against these coincidences having occurred, independently of any plagiarism, were so great that they might be held to amount to absolute certainty. It only remained for him to call witnesses in support of what he had alleged.

Mr. LUKE OWEN PIKE, the Plaintiff, a Vice-President of the Anthropological Society, was the first witness, and was examined by Mr. Jemmett. He confirmed the statements made in Mr. Grove's opening address, and gave a history of the manner in which he wrote his book, and in which he arrived at his conclusions. He had traced back all the assertions concerning the destruction of the ancient Britons to Gildas; had formed the conclusion that Gildas was not a contemporary author, and was, for various other reasons, untrustworthy, and he had quoted Mr. Hardy for some of the facts upon which his conclusion was based. Having but little faith in philology as an index to race, he had fallen back upon physical and psychological characteristics. He had devoted much labour, time, and expense in collecting evidence for his argument from physical characteristics, which, whatever might be its value, he believed to be original. He had paid special attention to the colour of the hair and the form of the skull. He had, from his own observation, compiled a table of hair-colours by a peculiar method of his own. The table appeared at p. 134 of his book. The defendant had given a similar table, very closely agreeing with his, at p. 507 of the defendant's book. He was decidedly of opinion that the defendant could not have observed the numbers given by him in the manner stated by him, and he certainly could

not have done so himself. He believed his argument concerning the hair-colour of the English, considered in relation with the hair-colour of the ancient and modern Teutons, and of the ancient and modern Celts, to be original. He believed his argument concerning the skull-form of the English, in relation with the skull-forms of the ancient and modern Teutons, and of the ancient and modern Celts, to be original. He had arrived at it by a long process of sifting evidence, which was very contradictory. He had not only read a number of works on the subject, but he had made independent observations and measurements of his own, especially at Netley Hospital. [His instruments were produced in court.] He obtained considerable information from various hatters. Except where he had made acknowledgment, all the statements in his book were the result of his own observations or inference.

Mr. PIKE then went on to give evidence concerning the state of the Defendant's MSS. when first produced, in obedience to the summons, and the alterations subsequently made in them. In the MS. essay of 1865 he said, there were missing at that time pages 5-8, 71-166, and 309-322, which had recently been produced. In the MS. of 1866, from which the Defendant printed, the passage concerning Gildas was missing when the book was first produced; and it appeared that the MS. had since that time been taken to pieces and rebound. The passage in question, as recently introduced, was paged in a different way from the rest of the book, the numbers of the pages not running in regular order. The corresponding catch-words, "Gildas examined," in the table of contents were interlined. In the essay of 1865, so far from Gildas being criticised as the original authority, there was a statement that "Gildas copied Bede," Gildas having in fact lived a century and a half before Bede. [The Defendant's MS. and his rough draft containing the same statement, were handed up to the Vice-Chancellor.]

Cross-examined by Mr. KAY. Mr. PIKE repeated that he had prepared materials for his work before the appearance of the advertisement issued by the Eisteddfod, and in particular that he had made notes upon Celtic philology as early as 1858 and 1859. He had copied them into his note-book produced; and other rough notes bearing upon the subject, and made at various times, had been pasted into the same note-book at the time of the appearance of the advertisement. In addition to the copy of the Defendant's prospectus sent to him by Mr. Blake, he had received one from Dr. Nicholas himself, but only after an interval of several days, and after he had spoken to a great number of persons on the subject. He repeated his statement concerning the way in which he arrived at his opinion concerning Gildas; he had looked into all the histories of England in his own possession, and all which he could find at the Museum, and traced back the statements concerning the extinction of Britons to Gildas; he always found either that Gildas was mentioned by name, or that Gildas's statements were adopted. The names of all these histories were not given in his list of authorities simply because the principle on which he had compiled that list was to give the books in which he had found information, and not those in which he had failed to discover any. He had acted on the same principle throughout.

Mr. KAY then asked a number of questions, of which the object was to show that all writers on anthropological subjects treat the subject in the same way. Mr. PIKE's replies were to the effect that there are several different schools of anthropology, some of which put aside physical characteristics altogether; and that even those which accept the evidence of physical character-

istics differ in their estimate of the value of hair-colour and skull-form. Prichard, for instance, had an opinion entirely different from his own of the value of such indications.

Mr. KAY wished to know which of the books in Mr. Pike's list had been consulted for the purpose of discovering the evidence of physical characteristics. To this Mr. PIKE replied, that he was quite willing to go through the whole list, and describe precisely what use he made of each work in it, but he objected to giving a selection merely from memory. This offer, which was repeated, Mr. Kay did not accept. Asked whether he had not found the idea of getting information from hatters in Professor Wilson's paper, published in the *Anthropological Review*, he pointed out that the paper in question appeared in 1865, while the letters from the hatters, produced in Court, bore the date 1864. After seeing Professor Wilson's paper, he added a note to what he had previously written, and mentioned this agreement in method, with Professor Wilson's name, and the note appeared in his book as printed. Mr. Pike was then cross-examined at great length concerning the absence of the criticism of Gildas from the 1866 MS. of the Defendant. He persisted in his former statement that it was missing when he first saw the MS., and that it had since been bound in. He produced a note to the effect that the passage concerning Gildas was wanting, and he was very positive in stating that this note was made at the time of the first inspection.

Re-examined by Mr. GROVE. Mr. PIKE again repeated all that he had said concerning the pages missing, both from the MS. of 1865 (about which there was no dispute) and from the MS. of 1866. Mr. Grove read the letters from the hatters to Mr. Pike, which contained some very curious information, and were admitted as evidence of the labour bestowed by Mr. Pike upon that branch of his subject. He elicited that no notice had been given to Mr. Pike, or his solicitors, of the restoration of any of the missing pages.

Examined by the VICE-CHANCELLOR. Mr. PIKE said he was acquainted with French, German, the classical languages, and, to some extent, with Welsh. He had consulted the Myvyrian Archaeology of Wales in Welsh.

The next witness was Mr. RICHARD STEPHENS TAYLOR, Junior, one of the Plaintiff's solicitors. He corroborated all that Mr. Pike had said concerning the absence of the section on Gildas from the Defendant's MS. of 1866, and concerning the absence of a number of pages from the MS. of 1865 at the time of the first inspection. He added that when he applied for a second inspection he was told, by Dr. Nicholas's solicitors, that the MS. had been sent back to the Defendant for him to prepare his brief.

This concluded the first day's evidence (April 27th).

On the second day the first witness called was Dr. JOHN BEDDOE. Examined by Mr. GROVE, he said he was President of the Anthropological Society of London, and a corresponding member of many foreign learned societies. He had for many years given his attention to anthropological science. He had read Mr. Pike's book, and considered the criticism of Gildas in it to be original. He had examined the tables of hair-colour in Mr. Pike's book and compared them with those in Dr. Nicholas's; he had found so very close a resemblance between the tables in the two books, in their proportions, that he did not think they could have been drawn up by two independent observers. Different observers differed extremely in their ideas about colour; he had proved that by setting different people to work on the subject. He did not believe that Dr. Nicholas, who was a very short man, could have collected eleven thousand instances in twenty assemblages. There were great

physical difficulties in the way, both by day and by night, both in-doors and out-of doors; he had himself collected as many instances but had been a very long time about it, though he had very keen sight. He had written several papers on the subject of hair-colours, but those which had been quoted by Mr. Pike were precisely those which were quoted by Dr. Nicholas, and those omitted by Mr. Pike were omitted by Dr. Nicholas. Two of these neglected papers were of at least equal importance to the subject with those referred to.

Cross-examined by Mr. KAY. He said that he had formed the opinion that Mr. Pike's criticism of Gildas was original from a considerable amount of reading on the subject, and he had himself written an essay on the Origin of the English. He was aware that Gibbon and others had discredited Gildas, but not for the same purpose nor by the same arguments as Mr. Pike. He considered his own method of tabulating hair-colours statistically was original. Prichard had vaguely recorded some of his impressions, but had given no figures; no one had previously made observations of any value for the purposes of science. It was very difficult to arrive at any result in-doors, owing to the variety of shades in different parts of the room. A man in a pulpit might be better than another, but a man in a pulpit had something else to do besides observing heads of hair; the value of the evidence of hair and skulls in ethnological investigations was a matter of opinion. Writers of the philological school rejected that evidence altogether, but he thought they were wrong.

Re-examined by Mr. GROVE. He said again, he thought Mr. Pike's criticism of Gildas was original, and he thought the Defendant's criticism was substantially the same. He thought the course of argument in Mr. Pike's book, and the deductions from the colour of the hair, the form of the skull, and their relations to the proportion of the British and Saxon people in England were original, and they differed considerably from his own opinions. He found the same course of argument in the Defendant's book.

Examined by the VICE-CHANCELLOR. He said he could take down all the instances of hair-colour which it was possible to take in the court in a very few minutes, but the difficulty of light was so great that there were very few instances which he could take down at all.

Mr. CHARLES CARTER BLAKE, examined by Mr. Jemmett, said he was Lecturer on Comparative Anatomy at Westminster Hospital, and had been Hon. Secretary of the Anthropological Society. He had received a copy of the defendant's prospectus in July, 1867, and immediately called Mr. Pike's attention to it in a letter, enclosing the prospectus itself. He saw the defendant's book on his return from abroad, in July, 1868. He had given attention to the subject of the two books for many years. He had not seen Gildas treated in a manner or with phraseology similar to that of Mr. Pike anywhere except in Dr. Nicholas's book. He had given his attention more especially to the subject of physical characteristics, and had pointed out in a review of Mr. Pike's book in the *Medical Times and Gazette*, that there were many authors whom Mr. Pike might have cited, but had omitted to cite in proof of his conclusions. Those were precisely the works omitted by the defendant in his list of authorities, and there was no reference to them anywhere in the defendant's book. The works referred to by the defendant were precisely the works referred to by the plaintiff. Mr. Pike's argument from the skulls was novel at the time at which it appeared, and not only the train of argument, but the generalisations upon which it was founded con-

cerning the shape of Celtic skulls. The identification of Greek with Celtic skulls was also novel. To all this he had observed a great resemblance in the defendant's book, even to the point of the Greek skulls, and an absolute identity in the phraseology. As regarded the defendant's tabulation of 11,000 hair-colours in twenty assemblages he had tried the experiment; and he believed the thing to be impossible. There was a plate in the defendant's book with representations of four skulls; they gave him the impression that they had been put there by a person unacquainted with the subject; they had been taken from two elementary works; and the four skulls were drawn in three different positions, so that any comparison between them was utterly impossible.

Cross-examined by Mr. OSBORNE MORGAN. He was acquainted generally with Gildas; and the arguments on that subject of the plaintiff appeared to him new; he was not in the habit of reading the *Saturday Review*, nor was he acquainted with Mr. Hardy's works. Both the plaintiff and the defendant discredited Gildas, and they both used a certain phraseology in discrediting him. He believed the fact that the modern English possess long skulls was first established by the plaintiff, and that the plaintiff had first combined the propositions that the Celtic skull was long, that the Teutonic skull was short, that the modern English skull is long, and that, therefore, the English are descendants of the ancient Britons. That was perfectly new.

Re-examined by Mr. GROVE. There were ten different heads in the defendant's book which agreed with ten heads in the plaintiff's book. He found them put in the same way, and bearing on the same subject in the same way; and the phraseology, if not agreeing letter by letter, was substantially similar.

The VICE-CHANCELLOR. "You have been in the habit of writing on the subject?"

Mr. BLAKE. "I have."

The VICE-CHANCELLOR. "You have been in the habit apparently of writing reviews upon works?"

Mr. BLAKE. "I have."

The VICE-CHANCELLOR. "Supposing these two books were put in your hands for the first time, with your experience as a writer and a reviewer, would you come to the conclusion that one was borrowed from the other, or that both were borrowed from a common source? One of these two hypotheses must be true."

Mr. BLAKE. "I should say that one was certainly borrowed from the other."

The VICE-CHANCELLOR. "The other hypothesis is that they might be both borrowed from a common source."

Mr. BLAKE. "That hypothesis would be impossible to my mind."

Mr. JEMMETT then addressed his Honour on behalf of the plaintiff. He said after the opening of his learned leader he would not occupy much of the time of the court. But there were one or two points which would add weight to the great mass of cumulative evidence already brought to bear upon the subject. His Honour had seen how Dr. Nicholas was so ignorant of the first duties of a historical critic in 1865 that he actually supposed Gildas lived after Bede and copied him, while the scope of his criticism, as published, was to show that Bede copied Gildas, and was, therefore, not to be trusted. But Dr. Nicholas had never even made this criticism his own; it was in direct contradiction to other parts of his book where he quoted Gildas, Bede,

and Nennius as trustworthy authorities. Even the quotation from Mr. Hardy, which appeared in both books (and which threw discredit on Gildas because he gave a wrong account of the abandonment of Britain by the Romans), had never been understood, but had been blindly copied by Dr. Nicholas. The mistake of which Gildas was there accused was that he had represented the Romans as finally abandoning Britain in A.D. 383, under Maximus, whereas, in fact, they did not really leave until the year 410, under Honorius. Now, not only had Dr. Nicholas taken the assertion of Gildas as correct, but he had, in a part of his book not copied from Mr. Pike, shown that he supposed Maximus to have been a contemporary of Honorius, and to have left Britain in the year 410, whereas Maximus had, in fact, died in the year 388. There could be no stronger proof that Dr. Nicholas had, in implicit reliance upon Mr. Pike, copied a criticism which he did not in the least understand. Mr. Jemmett then proceeded to read some parallel passages in addition to those already cited by Mr. Grove. He also pointed out that Dr. Nicholas's table of hair-colours for London was simply a multiple of Mr. Pike's percentages. The number used as multiplier was 60. Dr. Nicholas had divided one of Mr. Pike's classes into two, had disregarded the decimals, or rather substituted more convenient fractions, had then multiplied by 60, and by that very compendious process had saved himself a considerable amount of labour at Mr. Pike's expense.

Mr. KAY, in opening the case for the defence, complained at great length of the manner in which the plans of the two books had been drawn out side by side in the bill. He was, however, repeatedly interrupted by the Vice-Chancellor, who said that the bill was correctly drawn, that it gave notice to the defendant of what was alleged against him, and that it was idle to suppose that a Judge's mind could be unfairly influenced by that mode of stating the case. Mr. Kay then complained that no notice had been given to his client of the precise passages which were said to have been pirated, and he was dilating on this point when the Vice-Chancellor again interrupted him, saying,—"If you really mean to say that you have in any way been taken by surprise, the case shall be adjourned."

Mr. KAY referred the matter to Dr. Nicholas, who preferred to go on. He then resumed his argument, which was to the effect that all the passages alleged to have been pirated were, with the exception of the criticism of Gildas, written before the defendant had seen the plaintiff's book, and that Dr. Nicholas would establish this by his oath. He argued, however, that, supposing even Dr. Nicholas had had a number of ideas suggested to him by Pike's book, there was no piracy involved. Copy-right meant the right of producing copies, and there was no copy-right in arguments or ideas. But he would go further than this, and say that an author, not only had the right but was bound by his duty to his readers, to consult all preceding works on the subject on which he was writing. He then proceeded to cite cases with a view of showing that any author might take new heads of argument, and the arguments themselves from another work without any infringement of copy-right. He argued that Mr. Pike must have been mistaken in his assertion that the section on Gildas was missing from the MS. of 1866, and mistaken also in the time at which he made a note to that effect. The absence of the leaves from the MS. of 1865 was admitted, and would be explained by Dr. Nicholas. With respect to the criticism of Gildas itself, he denied that the alleged similarity existed between it and Mr. Pike's criticism. The verbal resemblances relied on by the plaintiff he said were not verbal

resemblances at all, and the passages quoted in common were open to one author as well as another. In the same way, he said, all the other verbal resemblances in the two books, if they could be called resemblances, were the result of chance. [As we have already given some of the passages in parallel columns without Mr. Grove's remarks upon them, it is hardly necessary to give Mr. Kay's remarks upon them. They must speak for themselves.] With respect to the copied mistakes, Mr. Kay said there was no error which two authors might not have fallen into independently. As for the expression, "*rutilate comæ not rutile comæ*," he did not think Dr. Nicholas implied that the whole expression occurred in Livy. It was a very natural distinction for two authors to draw. As for the confusion between the Gauls and their degenerate descendants, it was hardly to be called a mistake, and was, if a mistake at all, one which two independent authors might very naturally fall into. He did not see that any copied error had been made out in the case of the population abstracts. What had been done was just what anybody might do. Nor could he see that any error had been copied in the description of Blumenbach's work. He believed he should be able to show that the whole collection of skulls was known by the name of "Decades," and that Dr. Nicholas had arrived at his description in the course of his reading. He submitted that there was no case for the interference of the court. It was true his learned friend Mr. Grove had mysteriously hinted at something which had not yet been brought forward, but he hoped if any new matter really remained to be introduced, he should have the opportunity of replying to it.

Dr. THOMAS NICHOLAS, examined by Mr. Osborne Morgan, said he was a Doctor of Philosophy of a German University, was a Welshman by birth, and conversant with the Welsh language. He was educated at the Lancashire College, and brought up for the ministry of the English Independents. He had for seven years filled the chair at Carmarthen College, where he was Professor of Mental and Moral Science, of Ecclesiastical History, of the German Language, and of General Literature. As Secretary to the proposed Welsh University, he had been in the habit of addressing public meetings. He said the pages at first missing from the MS. of 1865 had been torn out by him in order that his luggage might be light when he was travelling about, and composing his essay of 1866, which was written principally while he was moving from place to place. The loose pages after being used were put into a box at his house at Carmarthen before the competition of 1866, and the box was never opened until recently, when the pages were discovered in it quite by accident and replaced in the book. The rough-draft book D, which contained the evidence of physical characteristics, and the table about which so much had been said, had been written before the end of 1865. He wrote his second essay with a view to publication, and intended to publish it, whether it obtained the prize or not. He finished it on the 13th June, 1866, but did not send it in until the 2nd of July, the last day appointed. He never heard of Mr. Pike's book until September, 1866, when he saw an advertisement of it in the *Saturday Review*, and he bought a copy of it in the following October. He did not get his MS. back from the Secretary of the Eisteddfod until early in that month, and left it with Professor Max Müller on his way up to London. It was afterwards sent to Dr. Rowland Williams and Dr. Davidson. No alterations or additions were made in it before it was sent to those gentlemen. He did not get it back from them until July, 1867, when he sent it to the Rev. Enoch Mellor, who kept it a month longer.

He published his book in March, 1868. He then went through the whole of the MS. from which his book was printed, stating what were the additions since it was sent in to the Eisteddfod. These were not important in the case except in the one instance of the criticism of Gildas, which Dr. Nicholas said he had substituted for a long note. But this section on Gildas was in the MS. book when first produced in obedience to the summons. No alteration had been made in the book or in the binding since that time. He sent a copy of his prospectus to Mr. Pike among the first, and a note of which he had not preserved a copy. He had made no alterations in the leaves of the 1865 MS. which had been torn out.

At this point the court rose.

The hearing was resumed on the 30th April, when

Dr. NICHOLAS proceeded to say that he had taken the title of the "*Decades Craniorum*" from Gliddon's *Types of Mankind*. In dealing with Gildas he referred to no book particularly except Hardy's *Monumenta* and Gildas' own works. He first saw the passage quoted by him from Stevenson in Hardy. He did not take a single word about Gildas from the plaintiff's book.

[At this juncture a copy of Bohn's translation of Gildas was handed to Mr. Jemmett by Mr. Pike.]

Dr. NICHOLAS then said, "Will you allow me to make a remark: I found the passage from Stevenson in the preface to Gildas's works in Bohn's edition. I afterwards referred to Stevenson's own volume, and found it out."

He had made the note about population abstracts from his own reference to the Census Returns of 1861.

With respect to the table of hair-colours, he said, he compiled it by counting heads in public assemblies. He first saw the passage from Livy which contains the words "*rutilatæ comæ*" in Prichard; Retzius was his great authority on the question of skulls. The idea of comparing the Greek with the Celtic skull was suggested to him by Lyell. Upon being asked again, he said it was suggested to him by Prichard.

Cross-examined by Mr. GROVE. Dr. NICHOLAS said, that he could not recollect to what places he went when he tore the leaves out of his MS. book, except that he was at Carmarthen. He had written a very large portion of his book while on his travels to places of which he could not recollect the names; he was chiefly at Carmarthen. He could not recollect the names of places where he wrote portions of his work, and none of the passages recalled to mind the places where they were written. He could not recollect where he was before he went to Carmarthen. He could not tell, even approximately, the time when he tore the leaves out, nor where he went with them, nor where he used them. He had a house at Carmarthen.

[The MS. of 1866, from which he printed, was handed to him, and he was requested to look at the Table of Contents of Chapter V, and say when the alterations in it were made.] He said they were made, as far as he could recollect, before the Essay was sent in. The word erased under the words "Mental and Moral" was "Psychological." He did not know that it had been partly erased with a knife. He could not make out that the head of the P and the tail of the y had alone been erased with the knife, or some such instrument; it might be so, but he could not make it out. He was quite certain the word erased was not "Psychical," because he had an objection to it and never used it. Whatever the word was he could not say why it was so much more elaborately erased than any other word in that or the adjoining pages. He could not tell why there were certain considerable alterations

made in the rough draft of his table of hair-colours, nor where he was when he wrote those tables. When he made the calculations at the twenty assemblages mentioned by him, he did not put the numbers down at the time but put the numbers down on slips of paper, and used them afterwards. He had not got any of these slips of paper. He had not mentioned any of those matters in his diary. At each assembly he put down the numbers present and the numbers of each colour as a total, but did not jot down each individual. He could not say when he first consulted Hardy's *Monumenta*, nor when he first consulted Retzius. He had a copy of Retzius in Court. He could not say exactly when he got it. He had not had it long, but would be very glad to say how long if he could. He believed he had got it this year; though he was now in the month of April he could not say whether he got it in January, February, or March. He got it from Germany, through Nutt in the Strand. He could not say what copy he consulted before he got his own; it was rather a common book. It could be purchased in this country. Mr. Nutt had not one in his stock. He did not know that he had applied to any other bookseller. He was not sure where he consulted the copy of Retzius to which he had referred in his book, very possibly at the British Museum, but he could not say. He could not give a reference to a single copy of Retzius in the British Museum, or any other place or library, except that which he purchased this year. He had consulted an original copy of Retzius somewhere.

MR. GROVE. "Will you swear that?"

THE VICE-CHANCELLOR. "I do not like that form of question."

MR. GROVE. "I do not doubt it is objectionable."

DR. NICHOLAS continued by saying, he could not state that he took those particular items from Retzius, though he had consulted the work. He had no doubt he had sought for Retzius at the British Museum.

The copy of Pouchet, mentioned in his list of authorities, he had had himself, but could not say when he got it, even approximately. He thought he first consulted it in the Anthropological Society's Library. He was not quite sure whether he took it away with him, but had consulted it at the British Museum a long time ago. Of that he was quite sure, but he could not say for certain that he had seen it at the Anthropological Society's Library. Asked more precisely about the French Edition of Pouchet published in 1864, which was the edition mentioned in his list of authorities, he said he fancied he saw it at the British Museum. He was not sure about it. The edition of Pouchet in his own possession was the translation published by the Anthropological Society. He had not got the French edition of 1864. He believed he had seen it somewhere, but could not say where.

The only passage of Livy quoted by Prichard, containing the words "*rutilatæ comæ*," was in vol. iii, pages 195-6; that described the Galatians, and Prichard accepted it as evidence that they were naturally of xanthous complexion. He had not meant to say that either he or Mr. Pike took their theories from Prichard, only that the passage was quoted there.

He had not had many books from the Anthropological Society's library. He had had the *Anthropological Review*. He had not, to the best of his recollection, had any books from the library except the *Anthropological Review*. He was not quite sure that he had ever consulted a book in the library. He had been in the library and looked at the books, but could not say that he had spent any time in consulting them.

MR. GROVE. "You cannot tell me that you ever consulted a book?"

DR. NICHOLAS. "I think the library, on the whole, is a very defective one."

The VICE-CHANCELLOR. "Do not make observations; confine yourself to evidence."

Dr. NICHOLAS in continuation stated, that he could not say when or where or from what copy of Gliddon he took the description of Blumenbach's "Decades." In the passages quoted from Gildas he had taken the translation of Bohn. He had done so because he felt diffident of translating the Latin himself.

Re-examined by Mr. KAY. Dr. NICHOLAS said that the word "Psychical," or "Psychological," or whatever it was, that had been erased, was not copied from Mr. Pike's book. The erasure had been made before the Essay was sent in for competition. A note made by Dr. Rowland Williams in pencil on the page about "*rutilatæ comæ*," had been made when the MS. was sent to him after the Eisteddfod of 1866.

Dr. ROWLAND WILLIAMS examined by Mr. KAY, said he was a Doctor of Divinity of the University of Cambridge, and vicar of Broadechalke. He had directed his attention to early English history, and had read a paper before the British Association on the Silurian types. He was very slightly acquainted with Dr. Nicholas. Dr. Nicholas's MS. was sent to him late in 1866. He had made no note of the date, but had been told it was in September or October. It was in his possession a few weeks when he returned it to Dr. Nicholas, but he could not give the exact date at which he returned it. He gave it a fair amount of perusal. He wrote the note in pencil while the MS. was in his possession. He believed the MS. to be substantially the same as when he saw it, but the part about Gildas had been added. He thought there had been a note about Gildas before, but could not swear to it positively. Mr. Pike had not spoken of Gildas as being a "monk," and Dr. Nicholas had. He had not only an impression that Dr. Nicholas had not taken his criticism from Mr. Pike, but he spoke positively on the point. He had not instituted a critical comparison between the two books, but had formed an estimate of them. He would like distinctly to state that as regarded the bulk and body of Dr. Nicholas's volume, and he thought a perusal of the two books would show—

Mr. GROVE objected. He said he could have produced plenty of evidence of this kind on his side.

The VICE-CHANCELLOR. "It may arise out of a question which I think I ought not to have asked. I did ask Mr. Carter Blake a question which probably I ought not to have asked, as to what his judgment would have been as a person accustomed to reviewing."

Cross-examined by Mr. GROVE. Dr. Williams said he could not swear to the month in which he saw Dr. Nicholas's MS. Mr. Pike had spoken of Gildas as exercising some ecclesiastical function, but that was not the same thing as being a monk. Gildas was generally considered to be a monk. He was a monk if he was the same person as Aneurin. There was much dispute about him.

Rev. Dr. DAVIDSON, examined by Mr. MORGAN, said he was a Doctor of Law and Divinity. He had no great knowledge of the subject matter of the two books. Dr. Nicholas's MS. was sent to him in January, 1867, and he kept it three months. It was substantially the same MS. as that which was produced in Court. There was a note in it about Gildas, but of what length he did not know. Hardy was quoted in it. He had not read the section on Gildas in the printed book.

Cross-examined by Mr. GROVE. He was intimately acquainted with Dr. Nicholas, who had written on his behalf on a controversial matter.

Mr. SAMUEL KINGSLAND SHERBORN (a printer) identified the pages on which the criticism of Gildas was written as those from which the corresponding pages had been printed.

Mr. CHARLES REYNOLDS WILLIAMS (one of the Defendant's solicitors), said he could identify the pages on which the criticism of Gildas was written as having been in the MS. when it was first brought to his office. He had been told that the passage had been added since the Essay was sent in for competition in 1866, and for that reason had written the word "Interpolation" in the corresponding part of his printed book.

This closed the case for the defence.

Mr. OSBORNE MORGAN, M.P., summed up on behalf of the Defendant. He said Dr. Nicholas's criticism of Gildas, about which there had been so much discussion, was not identical with that of Mr. Pike, and that, in point of fact, every one who took the views of Mr. Pike and Dr. Nicholas must of necessity discredit Gildas. It was true that both had cited common passages from Gildas himself and from Mr. Hardy, but there was no piracy in that; and the view taken of Gildas's character was not precisely the same, for "splenetic" was not the same thing as "melancholy," and Mr. Pike had not used the words "ignorant and prejudiced monk." And this criticism of Gildas was every thing of importance which had been written since the Defendant had seen the Plaintiff's book. The sections on hair-colour and skull-form had been written, as Dr. Nicholas had sworn, before he had even heard the name of Mr. Pike. He did not know whether his learned friend Mr. Grove intended to impute the most flagrant perjury to Dr. Nicholas, but, if not, the case was fully answered. He would not, however, rely solely upon Dr. Nicholas's evidence; he would deal with the case upon its merits. He argued, like Mr. Kay, that an author might take heads of argument, arguments themselves, ideas, illustrations, and references second hand from another author. None of these things constituted piracy, but he could not see that Dr. Nicholas had done them or any of them, and the instances of verbal similarity were not sufficient to support the case, as his learned leader had already pointed out.

The VICE-CHANCELLOR here remarked, "But you have not yet explained away that passage about '*rutilatæ comæ*, not *rutilæ comæ*.'"

Mr. MORGAN said, the quotation from Livy, if not the comments on it, was to be found in Prichard, and he could not see that a mere resemblance in the wording of the comments would go far towards convicting Dr. Nicholas of piracy. And even allowing that Mr. Pike's book came out on the 31st of May and that Dr. Nicholas's was not sent in for the competition until the 2nd of July, it was impossible that so large a MS. could have been written in the time. It had been shown that the MS. had been sent after it was returned from the Eisteddfod to Professor Max Müller, and then to Dr. Rowland Williams and other gentlemen; and Dr. Rowland Williams had identified his own note made then upon the very passage concerning the "*rutilatæ comæ*." If the copying had been done at all it must have been done at some time or other, but he submitted that there was no time at which it could have been done. The evidence of copied blunders had failed; for it was not a blunder to regard the Galatians as Gauls, the Galatians having been of Gallic descent. There was no point in the alleged mistake about the Population Abstracts. The mode in which the description of Blumenbach's works had been given had been explained, and nothing was left except such similarities as would necessarily occur when two authors, writing upon the same subject, took the same view.

The identity of conclusion was easily explained by the fact that no essay would have any chance at the Eisteddfod if it took any other view than that the English were Britons.

It was nearly half-past two when Mr. GROVE rose to reply. He said the case had assumed a most disagreeable aspect. His learned friend on the other side had used the *argumentum ad perjurium*, which, if it were pushed to its extreme limits, would place the plaintiff in any suit at the mercy of an unscrupulous defendant who chose to swear that he had not committed the acts imputed to him. Unfortunately a conflict of testimony was becoming the rule rather than the exception in every trial; but, however lamentable that fact might be to the moralist, it was an indication that the word of a defendant was not under ordinary circumstances to be accepted as a sufficient answer to a specific charge supported by numerous converging trains of circumstantial evidence. In this particular case he would ask his Honour to recollect the demeanour of Dr. Nicholas in the witness-box. He was not bringing a criminal charge against Dr. Nicholas; he was simply answering his learned friend's *argumentum ad perjurium*, the argument that every word spoken by Dr. Nicholas must be considered true, because to doubt it was to make an accusation of perjury. He submitted that such an argument as this would be of no value, even if there were no conflict of testimony; but there actually was a conflict of testimony concerning the condition of the defendant's 1866 MS. when produced at the solicitor's office. The plaintiff and his solicitor had both distinctly sworn that the section entitled "Gildas examined," did not form a portion of that MS. when first produced, but had been inserted at some time between last summer and the time of the trial. The defendant and his solicitor, on the contrary, swore that no change had been made in the MS. since its first production. It was for his Honour, who had had an opportunity of comparing the demeanour of the plaintiff with that of the defendant, to judge of their respective credibility. There was, without doubt, some difficulty in discovering a reason why the MS. from which the section "Gildas examined" was printed should not have been produced at first, especially as it had been admitted that the section in question had been written after Dr. Nicholas had seen Mr. Pike's book. His (Mr. Grove's) theory, however, was that there had been a change of tactics. He thought Dr. Nicholas had not at first liked to produce the MS. written on different paper from other parts of the book, written on both sides, and showing the marks of interpolation in the paging. But, upon reflection, it might have occurred to the defendant that the absence of the pages would be most damaging, while their presence, together with a confession of the time at which they were written, would have an air of frankness which might be beneficial. For this reason, and perhaps, too, in the hope of discrediting the plaintiff, they were restored. But the fact remained that Mr. Pike had looked specially for that passage in the MS., had discovered the place in which it should have appeared, had identified that place by the side-note abruptly broken off, had made a note at the time that the passage was missing, and had been confirmed by the testimony of his solicitor who went with him to inspect the MS. In confirmation of his theory respecting the change of tactics, Mr. Grove then proceeded to comment upon the glaring contradiction between the statement made on oath by Dr. Nicholas in his answer to the bill, and his statement on oath in the witness-box concerning the addition of "Gildas examined" to his work. In

his answer he swore that the whole of the published work was, with the exception of some philological tables substantially the same as that which he sent in to the Eisteddfod in 1866. In the witness-box he admitted that the whole of the criticism of Gildas had been written long after that time, and this very criticism had formed a most important feature in his prospectus issued to attract subscribers. As regarded the credibility of the witness, said Mr. Grove, the facts spoke for themselves.

Passing for the moment from the MS. of 1866, to the MS. of 1865, Mr. Grove quietly remarked that, in a suit in which there were so many curious coincidences of a wholly fortuitous nature, it was hardly a matter for wonder that the 125 pages missing, when the summons for documents was issued, should have been discovered, without any search on the defendant's part, before the trial came on. In this case, at least, it was not denied that the pages had been missing; they were found in a box which had not been opened for years, when Dr. Nicholas was looking, not for them, but for something else! And when they were found, no notice was given to the plaintiff or his solicitors, although the defendant had made affidavit, on the first production of his MSS., that he had not, and never had had, any other documents connected with the suit in his possession. Nor was it difficult to see why these pages had been kept back. The differences which were to be traced between them and the corresponding parts of the 1866 MS., the tags at the end of sections, the side notes in different ink, were all illustrative of the curious coincidence of the wonderful box. They all fitted in exactly with the other trains of cumulative circumstantial evidence. On that point, however, he would not then detain his Honour any longer, but would recur once more to the MS. of 1866, and would call his Honour's attention to an erasure which Dr. Nicholas, when in the witness-box, had first said that he could not see, and had afterwards admitted that he might possibly have made. That erasure was in the table of contents, and his Honour would see that where the words "Mental and Moral" then stood, the word "Psychical" had stood before. The head of the P and the tail of the y had been most carefully erased with a penknife, or some such instrument, and a number of strokes had been added to increase the apparent length of the word.

The Vice-Chancellor here asked, "But even supposing that has been done, what is your point, Mr. Grove?"

Mr. GROVE continued. My point, Sir, is that the use of this word "Psychical" gives a complete verbal identity in the plans of the two books, though Dr. Nicholas has attempted to conceal that identity by substituting the words "Mental and Moral" for the word "Psychical".

THE VICE-CHANCELLOR: Oh, I thought you had some point there.

Mr. GROVE: Yes, sir, and a most important point, which is illustrated by another similar erasure in the body of the MS.

At this interesting juncture, the court rose for the day.

On the following morning, Saturday, May 1st, the cause was set down for hearing after the unopposed motions, and Mr. Grove resumed his reply at a quarter before twelve o'clock. His speech was such a masterpiece of clear and brilliant exposition, and it was assisted by such dramatic incidents that we shall henceforward abandon the *narratio obliqua*, and give as nearly as possible his own words.

Mr. GROVE said,—Your Honour will remember that when the court rose yesterday, I was calling attention to the erasure of the word "Psychical" in

the table of contents of the MS. of 1866. My learned friend Mr. Kay at an early period in this trial interrupted me somewhat triumphantly to remark that the plans of the two books are not identical, because Mr. Pike speaks of the evidence of psychical characteristics, while Dr. Nicholas speaks of the evidence of mental and moral characteristics. Whatever force there may have been in that remark is turned against himself by this excessively careful erasure of the very word "psychical." The word has not simply had the pen run through it, as would be done by anyone correcting a MS. for the printer; but extraordinary pains have been taken, though taken in vain, to destroy with a knife, as well as a pen, all trace of the word which gives a clue to the piracy. And the very same thing has been done in the body of the MS. in the heading of the section corresponding with the table of contents. There also either the word "Psychological" or the word "psychical" (and I am confident that it is the word "psychical") has been manipulated in the same way for the purpose of concealing the fact that the word has been used. And I ought to tell your Honour that, although most of the facts have been furnished by the persons instructing me, I have myself made the discovery of this second erasure, and a most important discovery it is, as showing the defendant's *animus*.

THE VICE-CHANCELLOR. As this is a new point not previously brought forward in evidence, either Mr. Kay or Mr. Morgan will have a right to reply upon it.

MR. GROVE. Certainly; upon the second erasure alone. Here, then, we have a complete identity of plan—even to the very words which Dr. Nicholas has attempted to conceal—"the historical evidence" in the one book, "the historical argument" in the other; "the philological evidence" in one book, "the evidence of philology" in the other; "the evidence of physical characteristics" in one book, "the evidence of physical characteristics" in the other; and, finally, "the evidence of psychical characteristics" in one book, and "the evidence of psychical characteristics" in the other. After the observations made by your Honour, I need not dwell further upon the remarks of my learned friend, Mr. Kay concerning the manner in which the plans of the two books have been set out in the bill. He insisted much on the fact that no chapter or section is headed either "The Evidence of Physical Characteristics," or "The Evidence of Mental and Moral Characteristics," but, as your Honour has perceived, the chapter is headed "The Evidence of Physical, Mental, and Moral Characteristics," and of that chapter the first section treats of the "physical," the second of the "mental and moral characteristics of the English people. The words "The Evidence" have simply been brought down from the heading of the whole chapter to the headings of the sections, and the plan of Dr. Nicholas's book is quite correctly stated in our bill.

Before I pass from the identical plans to the identical passages in the two books, I have a word to say upon the manner in which Dr. Nicholas tells us that he composed his work. We have 168 different books mentioned in his list of authorities (I have not myself counted them, but I take the computation of my learned friend Mr. Kay) 168 books consulted by a gentleman who wrote most of his work while he was travelling about! Is it a matter for surprise that he could not tell us where he saw any one of the authorities about which I asked him? Where did he see Pouchet? He did not know; he could not say! It might have been at the rooms of the Anthropological

Society, but he was not, as it turned out, prepared to assert that he ever consulted a single book there in his life.

THE VICE-CHANCELLOR. He was not a member of the Society at the time.

MR. GROVE. No, sir, he was not; but I was willing to suppose that the Anthropological Society is a hospitable body, and that if a stranger wished to consult a book he might be permitted to do so. But I can give your Honour another reason why Dr. Nicholas would not state positively that he saw Pouchet in the library of the Anthropological Society. It was because we had in court an officer of that Society who would have proved that he never consulted any book whatever in that library before the appearance of his own work. I can give your Honour a reason why he would not state positively that he consulted Retzius at the British Museum; it was because we had in court an officer from the museum who would have shown that Retzius was not in the library at the time.

THE VICE-CHANCELLOR. I have written to inquire about both Pouchet and Retzius, and I expect an answer shortly from Mr. Watts, the keeper of the books at the Museum.

MR. GROVE. Then I will pass on to another point, and make a remark upon Dr. Nicholas's memory. It was extraordinary what a perfect recollection he had of every date, of every minute fact, of every locality, when my learned friend Mr. Morgan was examining him in chief. But it was still more extraordinary that he was unable to remember anything when he was cross-examined by me. Time, place, and every detail had become quite suddenly a blank to him. It is a difficult thing to deal with such a witness as that, and I confess that he tried my patience. I confess that when I thought I was pinning him down to one solitary definite statement, I made use of an expression which was not suited to this court, and asked him whether he would swear it, although he was already upon his oath.

THE VICE-CHANCELLOR. You need not apologise again for that, Mr. Grove.

MR. GROVE. It was his demeanour in the witness-box that wrung the expression from me.

THE VICE-CHANCELLOR. Here is the letter from Mr. Watts. [The purport of this letter was that the French edition of Pouchet, published in 1864, and mentioned by Dr. Nicholas in his list of authorities, was not in the Museum at all (though other editions were), and that Retzius had only been added quite recently to the library of the Museum.]

MR. GROVE. That, sir, is what we knew to be the case; but I have another word to say about Retzius. [To Dr. Nicholas's solicitor.] Give me your copy of Retzius. [A new and unsoiled copy was handed up to him.] [To Mr. Pike's solicitor.] Now let me have Mr. Pike's copy. [An old and much worn copy was handed up to him. He took the new copy in his left hand and the old copy in his right, and held them out before him.] Here, he continued, your Honour will perceive the characters of the two men. Here in my right hand are seen the marks of honest industry, of persevering research, of the midnight oil; there in my left is Dr. Nicholas's representative, bought a few weeks ago, and consulted only for the purposes of the present suit. [This burst following upon the letter from the Museum caused no small sensation in court.]

MR. GROVE resumed: It is not only Retzius, nor even Retzius and Pouchet alone, that Dr. Nicholas has professed but omitted to consult. Your Honour has heard him confess that he would not venture to translate Gildas for

himself and took his translations from Bohn. And when he was reading his Bohn, and compiling his great list of 168 original authorities, he was travelling about the country so lightly equipped that he could not even carry the whole of his MS. of 1865 with him, but had to tear out leaves in order to lighten his luggage? Yet this MS. book is not a large one; and where were then the 168 authorities. Need I suggest to your Honour that, if he was travelling about at all, he was travelling with no works of reference but Pike and Bohn in his carpet bag?

THE VICE-CHANCELLOR. That is your theory, of course.

MR. GROVE. That is my theory, certainly, on the assumption that he was travelling in Wales, though on this point, as on many others, his memory was so defective that I cannot understand where he was during any part of his journey.

THE VICE-CHANCELLOR. I could not quite understand it. There was something about his head-quarters being at Carmarthen.

MR. GROVE. So I understood at last, though my first impression was that he started from London. But, wherever his head-quarters may have been, he was very positive in stating that this work, with all this list of authorities, was written while he was travelling, he cannot say where. It may be that this will afford some explanation of the identity of passages in the two books and I propose to go through the criticism of Gildas and the sections on hair colour and skull-form to show your Honour that there is hardly a paragraph in them which does not closely agree with something to be found in Mr. Pike's book.

MR. GROVE, in commenting upon the various passages, said an attempt has been made to show that Dr. Nicholas's criticism differs from Mr. Pike's because the former uses the word "monk" and the latter does not. Mr. Pike, however, says Gildas exercised an ecclesiastical function, and he could hardly have done that in those days unless he had been a monk. An attempt has also been made to show that the words "*rutilatæ comæ* not *rutilæ comæ*," have been taken by both authors from Prichard. But, as your Honour has seen, Prichard, though he quotes Livy, makes no such comment, and uses the expression "*rutilatæ comæ*" for a wholly different purpose. He does not, like Mr. Pike and Dr. Nicholas, confound the degenerate Galatians of Asia with the true Gauls of Europe, but speaks of them as being what they really were, and actually treats the word "*rutilatæ*" as though it were equivalent to "*rutilæ*," by saying that the Galatians had naturally a xanthous complexion. And while on this topic I may as well point out to your Honour that Prichard's whole system and opinions are so far from being the foundation of any part of Mr. Pike's book that the two are in direct opposition. Prichard says he does not know how to account for the fact that the English have dark hair, when all their possible ancestors, Celtic and Teutonic alike, had fair hair. Mr. Pike says the English are descended from the Britons because the Britons had dark hair. Again Prichard says that resemblances and differences of skull-form and other physical characteristics afford no ground for assuming identity or difference of race, while Mr. Pike, followed by Dr. Nicholas, lays special stress on the argument from skulls and hair.

[The learned counsel here cited a number of passages from Prichard's *Physical History and Natural History of Man*.]

So much for the argument from Prichard, which was to have destroyed one of our positions. Then as to the copied blunder in the description of Blumenbach: a copy of Gliddon has been produced, in which the whole collection

is described as "Decades," but Dr. Nicholas could not tell us when or where or from what copy of Gliddon he got that description. And he has still left unexplained the fact that he introduces the letter *e* between *i* and *d* in the Christian name, which in the title-pages of Blumenbach's collection is written Frid. It is, no doubt, only another of the curious fortuitous coincidences, of which we have so many, that Mr. Pike had previously done precisely the same thing. It is curious, too, that Dr. Nicholas has nowhere mentioned Gliddon in his book; and then, again, it is curious that both Mr. Pike and Dr. Nicholas should erroneously take Middlesex and Surrey as the representatives of London, when Dr. Nicholas might have found a table giving all the particulars he wanted for London itself, without putting himself to half so much trouble. He wanted the proportion of the inhabitants of London born out of London; he says he consulted the Census Returns of 1861; yet there is the very information he wanted ready to his hand, and nothing which could induce him to follow the inaccuracy of Mr. Pike, who went to the return of 1841.

Much has been said about the impossibility of the piracy having been committed at any time when Dr. Nicholas's MS. was in his possession after the appearance of Mr. Pike's book. It is not for me to give the exact time when each particular passage was taken. There was a considerable interval between May 31st, when Mr. Pike's book was published, and the 2nd of July, when Dr. Nicholas's Essay was sent in. And the time between the holding of the Eisteddfod and the sending of the MS. to Dr. Rowland Williams we really know nothing at all about. Dr. Williams does not tell us positively when he got the MS. It might have been in September, or in October, or—

The VICE-CHANCELLOR. He said he had been told that in Court.

Mr. GROVE. He said he had been told that; and even if we admit it, nothing is proved by it. The MS. was sent to Mr. Max Müller before it was sent to Dr. Williams. Why then was not Mr. Max Müller called? It is idle to say that Dr. Nicholas had no opportunity of adding to his MS. after the Eisteddfod on such evidence as this. We have no evidence when the MS. was sent to Dr. Williams, or where it was before it was sent to him. Then we have been told, or have had it insinuated, that every one who treats on the subject must have exactly the same plan, and every one who takes a view opposed to our Teutonic origin must discredit Gildas. The simplest answer to that is that Dr. Nicholas's Essay of 1865 was not on the same plan, and did not contain a criticism of Gildas. And then my learned friend Mr. Osborne Morgan says that every essay sent in must of necessity make out the English to be descended from the ancient Britons or it would have no chance of success. Why, that is the very opposite of the truth. The Welsh, it is true, believe themselves descendants of the ancient Britons, but they believe that of themselves in contradistinction to the English, and they pride themselves upon it in opposition to the "Saxon." In fact, the common expression "Dim Seisnig" is the true index to their real feelings.

And now I am glad to say I have arrived at the end of a case which has been most difficult and most painful to me; but I hope your Honour will see that there is an amount of cumulative evidence brought forward which admits of only one hypothesis except that of a miracle.

Mr. MORGAN, having the right of reply on the second erasure, said: My explanation of it is that the word erased is neither "Psychological" nor "Psychical" but "Physiological." The fact is my client's book shows in many places that he has a most imperfect knowledge of Greek, and I believe he did not know how to spell the word "Physiological." It seems to me that he

left out the *h*, and when he discovered his mistake he was so much ashamed of it that he tried to conceal what he had written. That I believe to be the true explanation.

Mr. GROVE said, he would not controvert his learned friend's opinion of Dr. Nicholas's attainments in Greek or English, but he believed his Honour would see that the word erased was not "physiological", but "psychical", or if not that, "psychological", and either of the two would serve his purpose.

The VICE-CHANCELLOR said, that so many important issues were involved that he should reserve his judgment until after the vacation.

Judgment in the cause was given on May 24th. The Court, as before, was crowded with literary and scientific men, and the most profound silence was maintained whilst his Honour, after stating the object of the suit, pronounced judgment as follows :

"The plaintiff says in substance, 'I wrote my book in support of a theory that the English are not, as generally supposed, mainly and substantially of Anglo-Saxon or Teutonic race; but that, on the contrary, they are plainly and substantially of the old Celtic race,—the same people which possessed this land before the invasion of the Romans. I proceeded,' he says, 'to consider the subject under the heads of—1. The Historical Evidence; 2. the Philological Evidence; 3. the Evidence of Physical Characteristics; 4. The Evidence of Psychical Characteristics.' The defendant has pursued in the third part, which occupies by far the greater portion of his book, precisely the same plan, with this difference, that he has added a chapter on English law; that he has made a separate chapter of the evidence of topographical and personal names; and that for the word 'psychical' he has used 'mental and moral.' The plaintiff says, 'that plan, which is in substance identical with mine, is copied from mine.' He further says, 'It was necessary to my argument to get rid of a good deal of what had been taught us as history of the Anglo-Saxon invasion, and I accordingly proceeded to show that the stories of Hengist and Horsa, of Vortigern and Vortimer, of the complete expulsion of the British race by the Saxon invaders, were mythical. In the investigation of that subject, I traced the whole of what has passed for history to Gildas, and I proceeded to inquire to what extent, according to the canons of modern historical criticism, reliance could be placed on the narrative of Gildas, and I came to the conclusion, on several grounds, that the narrative is wholly untrustworthy. In the defendant's book, I find that he adopts exactly the same course of argument, the early history treated as of the same legendary character. I find it traced to Gildas as the sole foundation for it. I find the authority of Gildas then tested by the same canons, and the same conclusion which I had arrived at also reproduced, and on the same, or substantially the same, grounds. It is not only the logic

which is the same, but the rhetoric shows most singular coincidences.' (His Honour here referred to passages from the works of plaintiff and defendant.) The plaintiff further says, 'I took especial pains with respect to certain physical characteristics, the colour of the hair and the form of the skull. I said that there was a popular theory starting with two assumptions:—1. That the Anglo-Saxons were a fair-haired, red-haired, or flaxen-haired people: 2. That the English are a fair-haired, red-haired or flaxen-haired people. I proceeded to demolish both these assumptions. The defendant has done the same. As to the second assumption, I proceeded to give the results of my personal examination of 4,848 heads in London; and proceeded further to show, from the population abstracts, that London might be considered a fair representative of the whole of England; that it is peopled not exclusively by Londoners, but by natives of all parts of the country. I find,' the plaintiff says, 'in the defendant's book a similar statement of identical results of personal investigation; and, what is very extraordinary, I find that though the defendant's results are given as arrived at both in London and the north of England,—6,000 in the one, and 5,000 in the other,—he, too, proceeds to show, and to show from the population abstracts, that the population of London is drawn from all parts of the island. I proceeded,' the plaintiff says, 'to ascertain what was said by ancient authors, and with what qualifications these statements were to be received as to the hair, colour, eyes, and complexion, of the ancient inhabitants of these islands, the Gauls, and the ancient Germans. The defendant has referred to the same descriptions, and made the same qualifications. For example, I pointed out that when Tacitus and other writers asserted that all the Germans had blue eyes and *rutilæ comæ*, it was to be noted that the Greeks and Romans were generally dark-haired, and may have regarded fair hair as a rare and great beauty, and may have been struck by a proportion of light hair greatly in excess of that which they found among themselves. Again, having premised that the passages in which the Gauls or Celts are described have been carefully collected by Prichard, I made a comment on the passage quoted by Prichard from Livy, that the expression was '*rutilatæ comæ*', and not '*rutilæ comæ*', 'reddened,' not 'red'. Having come to the conclusion that the Gauls were in the habit of dyeing their hair of a lighter hue, I made a passing reference to the alleged custom, now prevalent in France and England, of dyeing the hair red. The defendant has made the same fashion the subject of a rhetorical paragraph.'"

His Honour, after mentioning other charges made by the plaintiff against the defendant of having adopted his results without inde-

pendent investigation; especially in reference to the argument derived from a comparison of skulls, proceeded as follows :—

“These are some, and some only, of the points to which the plaintiff’s counsel has drawn my attention. I have read both the books carefully in the parts complained of, and if the matter rested on a comparison of the two works, I could have no doubt whatever that the defendant’s work was, in these parts, a palpable crib from the plaintiff’s, transposed, altered, and added to,—to use the words of Lord Strangford’s award, ‘essentially, indeed typically, second-hand, run off easily from the pen by a well-trained writer’,—a writer, I would add, skilful in appropriating the labours of another, and in disguising, by literary artifices, the appropriation.

“But the defendant has pledged his oath to this, that his work is an independent work, written substantially before he had seen the plaintiff’s work, and that the resemblances are due to the nature of the subject,—to the object, which was common to both, of establishing for the ancient British a large share in the production of the great British nation of the present day,—to the obvious nature of the topics which such an object would suggest to any persons who had followed the course of modern historical criticism, and of ethnological and anthropological research and speculation, and the like obviousness of the authorities which such persons would refer to and quote. His answer contains the following passage :—

“I say that the MS. from which my said book was printed, with the exception of appendices A, B, and C, which I afterwards inserted at the suggestion of Professor Max Müller, and of the index, and of some additional sentences and notes, principally suggested by Professor Max Müller and Dr. Rowland Williams, is *verbatim* the same MS. as that which I submitted for competition at the Eisteddfod in 1866, some months before I had ever seen or heard of the publication of the plaintiff’s work’, etc.”

His Honour proceeded :—“The defendant has been examined and cross-examined before me at considerable length. He adheres to his statement in the answer, with one most notable exception. He now states that the whole chapter about Gildas was written, or as he calls it, re-written, after he had seen the plaintiff’s book, and after the MS. had been submitted to Professor Max Müller and Dr. Rowland Williams, and he, not an illiterate man, but an author accustomed to test the weight of historic texts, can give no further explanation of the deliberate and emphatic statement in paragraph 18 (the passage quoted from the answer) than that it is stronger than his instructions to his solicitor went. It has been pressed on me that I cannot decide against the positive oath of the defendant without convicting him of

wilful and corrupt perjury. I have had occasion more than once to say that this is not a criminal court ; that I am trying no one for any crime ; I am here bound by my own judicial oath to well and truly try the issue joined between the parties, and a true verdict give according to the evidence ; that is to say, according as I, weighing all the evidence by all the lights I can get, and as best I may, find the testimony credible or incredible, trustworthy or the reverse. The law which admitted the testimony of the parties, and of interested persons, was passed in full reliance on the judges and on the juries that they would carefully scrutinise such testimony, and would give it such weight as it deserved, and no more, or no weight at all. Is the result of the defendant's examination, or cross-examination, such as to enable me to place reliance on his story ?

“To begin with, I have read through carefully the whole of the notes marked A and B, which were the materials for his first essay, and I am satisfied that he had not, at the time he wrote them, the remotest idea of that which is now found in the parts of his book complained of. To the author of A and B the common school histories of England were genuine history. Hengist and Horsa, Vortimer, and Vortigern were historic persons ; there is no trace whatever of the sceptical criticism which will have it that the whole of that history, fit only for the nursery, is to be carried back to Gildas only, and that Gildas, if not himself a mythical or shadowy personage, is a historic witness wholly untrustworthy. Indeed, the author was so little versed in the subject, that he talks of Gildas copying Bede, and putting in darker colours. There is no trace whatever in these notes of the examination of the ancient authorities as to hair and complexion of Britons, Gauls, and Germans, and of the numbering of the colours and shades of hair of the present people of the country. There is no trace whatever in those notes of the examination of the evidence afforded by ancient skulls, and of the comparison between that evidence and the results of a careful examination of the existing types of modern heads, English and German. The plaintiff says, ‘If you did not take all this from my book, tell me where you took it from. Where are the materials from which you elaborated it ?’ The defendant is unable to say when or where he gathered the materials, or when or where, indeed, he wrote any part of his present essay. The collection of materials for a genuine literary work is a thing of time and labour. You cannot walk by instinct to the proper shelf of a library, take down the right book, open it at the right page, and hit on the right passage, and just the book, the page, and the passage, which somebody else has found before you. The defendant has not a single rough note to produce, no trace of his quarrying in the British Museum, or

any other like quarry, from which the stones of the literary edifice were to be built up. His Honour then referred to defendant's diary from February, 1866, up to July 2, when the prize essay was sent in, and observed,—It is certainly very singular that an author should not be able to give a single place or time when or where he consulted a high authority, and that he should not be able to produce a single original note, extract, or quotation. Then there were some special matters on which he was especially pressed :—‘ You have quoted Retzius, where did you find him ? ‘ I cannot say.’ ‘ You have quoted Georges Pouchet, *Pluralité des Races Humaines*, Paris, 8vo, 1864), where did you find him ? ‘ I cannot say.’ It is to be observed that these books are not in the British Museum. Again, he was asked about the public meetings at which it is stated in the book that 10,000 complexions had been marked for the purpose of this essay, with the detailed figures of the results obtained, ‘ Can you produce the times and places of these meetings ? ‘ He is again unable to fix time and place. I have been, therefore, obliged to arrive at the conclusion that the account which the defendant has given of his composition of his work, in the matters complained of, is not probable, is not credible, is not trustworthy ; and the result of his answer, his examination, and his cross-examination, on my mind, so far from displacing, has confirmed the conclusion produced by the internal evidence and the comparison of the two works.

“ This conclusion, however, is not sufficient to dispose of the case. Plagiarism does not necessarily amount to a legal invasion of copyright. A man publishing a work gives it to the world, and, so far as it adds to the world's knowledge, adds to the materials which any other author has a right to use, and may even be bound not to neglect. The question, then, is between a legitimate and a piratical use of an author's work. In considering this I have not been unmindful of the small comparative extent of literary composition which is traceable from the one to the other ; I have not been unmindful that there was some not immaterial exercise of literary labour and skill in the transfusion and transposition which I have held to have been made, and I have endeavoured to guard myself against any prejudices derived from my hostile conclusions against the defendant which I have stated. I have considered it as if the defendant had openly borrowed from the plaintiff's book, and had candidly acknowledged the source. And I think there is a good deal which he might have done, so doing it. There is no monopoly in the main theory of the plaintiff, or in the theories and speculations by which he has supported it, nor even in the use of the published results of his own observations. But the plaintiff has a right to this—that no one is to be permitted, whether

with or without acknowledgment, to take a material and substantial portion of his work, of his argument, his illustrations, his authorities, for the purpose of making or improving a rival publication. That the part taken in this case is material and is substantial there is no better evidence than the defendant's own circular inviting subscriptions.

"The plaintiff, therefore, has in my judgment, made out his case, and he is entitled to an injunction to restrain the publication of the book in its present state, or of any book containing the 7th section of chapter 1, part III, or section 1 of chapter 5, of part III, and an order for the cancellation of those parts. He is entitled to his costs of the suit, and to an account and payment of his damages. I stated at the outset that my view of the damages in cases of literary piracy is that the defendant is to account for every copy of his book sold as if it had been a copy of the plaintiff's, and to pay the plaintiff the profit which he would have received from the sale of so many additional copies, and I adhere to that mode of assessment."

MUSIC IN RACE.*

IF there is anything to cheer the student of anthropology it is the daily growing influence his science exerts on other and often on very distant fields of inquiry as soon as that inquiry begins to assume a really scientific character. Of the many instances thereof which have lately come under our notice one is too significant to be entirely omitted from this *Review*, although we are unable, from want of space, to give of it so full an account as it in some respects deserves.

Whilst the Anthropological Society of London has been discussing about the connection between race and religion, a very fierce dispute was carried on amongst the musicians and critics of Germany about the Jewish element in modern music. Of course, the subject is eminently one which falls to the domain of anthropology, and nobody but a student of the science of man will be entitled to speak with

*1 *Das Judenthum in der Music*. Von Richard Wagner. Leipzig: den J. J. Weber, 1869.

2 Wilhelm Lübcke und Eduard Hanslick über Richard Wagner. Berlin: Louis Gerschel, 1869.

3 Offnes billet-doux, etc., an Herrn Richard Wagner. Von E. M. Oettinger. Dresden: L. Wolf, 1869.

4 *Das Judenthum und Richard Wagner*. Berlin: W. Adolf and Co., 1869.

5 *Histoire du Lied ou la Chanson Populaire en Allemagne*, par Edouard Schuré. Paris: Librairie Internationale, 1868.

authority in such a discussion. As in religious and political questions, when race has once been admitted, it becomes a factor of the highest importance, so now in a musical controversy ; the science of race is therefore, we repeat it, quite indispensable to form a judgment on many subjects apparently distant and far removed from it ; and to its opponents, who threaten the very existence of such a science, the poet has said,—

“ Ils disent qu'elle est morte,
Moi, je la crois vivante.”

Richard Wagner has played for a quarter of a century so prominent a part in the music and literature of Germany, that we cannot but be pleased to see him enter on an ethnological inquiry and give us his views about the influence of race on music and art, language and literature. Unfortunately for him, he has mixed up personal matter to such an extent with his theory, that it impairs very seriously the value of his pamphlet. On the other hand, there is in everyone of the numerous replies which have appeared to it a violent if not offensive tone of invective utterly at variance with the calmness and equanimity which ought to characterise the treatment of scientific topics ; the cause of it is no doubt an indignation not altogether unnatural at Wagner's undisguised and unmeasured attacks on Jewish composers and writers of eminence whose works have endeared them to their contemporaries. Of course, we are far, very far from anything like a settlement of the race question or any part of it ; but so much is certain, the time has gone by for simply ignoring the element of race in human affairs ; it is a difficulty we must grapple with ; a know-nothing-policy will not solve it. We, consequently, cannot agree with those who blame and vilify Wagner for having drawn attention to a subject of importance, however much we may dissent from his views and object to the language in which they are couched. The arrogant and self-opinionated style of his former writings has always been a source of complaint to his friends, and a weapon of ridicule in the hands of his enemies ; still the book under our notice is in its personal parts far surpassing the faults observed in his previous works, many passages bordering on the ludicrous if not actually so. To separate from the ever-intruding self of the author what bears on the question of race, and is perhaps valuable, requires an effort in which only an enthusiastic student of science will be successful ; his opponents, however, have replied more fully to the personal than to the theoretical portions of the essay ; we can refer to the latter only.

Wagner maintains that up to the present day the Jews are strangers in the countries in which they are born ; that they speak and write their languages as foreigners do ; that the national element in art

(including poetry, music, &c.) being essential, the Jews cannot exercise any wholesome influence in the progress and development of art and literature: no attempt is made to prove these sweeping assertions; instead of a proof, we merely meet with an appeal to our senses and feelings. But as Tennyson says,—

“They are dangerous guides the feelings,”

and in this instance we are disposed to agree with him. Wagner's adversaries parade a host of well known names to substantiate the claims of contemporary Jews to eminence in literature and art. Still we do not find any exhaustive answer to some of Wagner's remarks; the creative genius of true poetry appears no doubt in an enfeebled form in the modern Hebrew, and the only apparent exception of which we are aware is the case of Heinrich Heine, whose father was a Jew, whilst his mother, if we may judge by a sonnet addressed to her, sprung from a noble family of German extraction. The subject is too wide to be more than alluded to in the present notice, and we must make haste to come to the musical part of the controversy.

It is, we believe, an established opinion that music is the branch of art in which the Jewish element is most conspicuous and successful. Wagner who in his former writings has been exerting himself to detract from the glory which by his admiring countrymen is shed round the heroes of their favourite art, Gluck, Mozart, and Beethoven, who were not of Jewish origin, now undertakes to annihilate the fame of Mendelssohn and Meyerbeer, who undoubtedly were Jews; but instead of sound and impartial criticism of their works we are treated to an argument of the impossibility of Jews composing anything of value at all.

It is stated that if you have no thoughts of your own to express in music you may still go on composing a vast number of works by reproducing in a varied form and manner the thoughts of others. According to Wagner the Jews excel in this particular, and composers of another nationality if influenced by them or by the prevailing (Jewish) taste of the period are apt to do the same. It does now-a-days, he tells us, not matter to the public or the critics, what is said in music, but how it is said. This low estimate of our concerts and operas and their frequenters strangely contrasts with the notion that never at any period was good and genuine music more cultivated and cherished than it is now. Wagner's enemies, therefore, retort that he only becomes a *laudator temporis acti*, because his own pretensions as a leading composer are at present very little appreciated. Another assertion, equally startling, is that Jews are incapable of being good actors or singers or performers on the stage; amongst the causes alleged for this defect we find an allusion, not sufficiently worked out,

to a racial peculiarity in uttering sounds, and to absence of general artistic ability in the modern Jew originating in his selfishness and his unsympathetic and dispassionate mental organisation. Unfortunately Wagner hardly ever condescends to particulars; we must therefore take a great deal more upon trust than we feel disposed to do, and there can be no doubt that his opponents have mostly the best of the argument when they bring forward notorious cases in which the successes of Jews upset the theories advocated by Wagner.

Still that does not go to the root of the matter. There may be some important truth underlying a theory which, unless confined to proper limits, appears to be in contradiction to daily observed facts; this is but of too frequent occurrence with writers who do not proceed systematically with their subjects, and certainly the absence of all scientific method and scientific spirit in the essay of Wagner and in the replies it has called forth is sincerely to be regretted. We can look upon them only as material not entirely valueless to a future enquirer into the place which the Jews occupy in nature; a subject of considerable interest to the anthropologist, one which has often been touched upon incidentally by authors of all kinds and all nations, but never yet treated comprehensively, impartially, and from a scientific point of view.

We cannot conclude this notice without warmly recommending Monsieur Schuré's *Histoire du Lied* to all students of the subject; it treats in a masterly manner a subject which is not entirely disconnected with the subject-matter of the Wagner-controversy, although published without reference to the latter, and in fact some weeks before it commenced. To all anthropologists interested in folk-lore, the character of the Germans, or music, this history of German song will be a welcome gift, all the more so as it is written in an easy and elegant style not at all inconsistent with learned research and laborious study.

WALLACE'S MALAY ARCHIPELAGO.*

MR. WALLACE is well known as an accomplished naturalist and an indefatigable traveller, and in the work before us we have the fruits of his scientific labour during a seven years' residence in the Malay Archipelago. During this period, Mr. Wallace travelled upwards of fourteen thousand miles, making sixty or seventy separate journeys within the archipelago, with no despicable result, if we may judge from the number of specimens in natural history he obtained, embracing many new species. The details he gives of animal life in the far east are full of interest, his account of the bird of Paradise being especially interesting to the naturalist. Our readers, as anthropologists, will, however, take a keener interest in the particulars our author gives relative to the great man-like ape of Borneo,—the orang-utan, or *mias*, as it is called by the aborigines. Any details of the habits of this animal must be acceptable, as bearing on the vexed question of man's relationship to the ape tribe. Mr. Wallace was so fortunate as to obtain a young female *mias* alive and unhurt, and although it was extremely young, he was able to keep it alive for nearly three months. During this period he had much opportunity of observing its habits, and it is curious to notice how closely they resembled those of a human baby. This was the more noticeable, as a young hare-lip monkey (*Macacus cynomolgus*), of apparently about the same age as the *mias*, was much more active than the latter, and displayed a much greater intelligence. Thus, "the *mias*, like a very young baby, lying on its back quite helpless, and rolling lazily from side to side, stretching out all four hands into the air, wishing to grasp something, but hardly able to guide its fingers to any definite object; and when dissatisfied, opening wide its almost toothless mouth, and expressing its wants by a most infantine scream. The little monkey, on the other hand, in constant motion; running and jumping about wherever it pleased, examining everything around it, seizing hold of the smallest objects with the greatest precision, balancing itself on the edge of the box or running up a post, and helping itself to anything eatable that came in its way." The continual effort to grasp something with the hands, observed of the *mias*, and the satisfaction exhibited when it obtained possession of a stick or a rag, are remarkably babylike. Hardly so the pleasure it took in being placed "under the pump" and afterwards

* *The Malay Archipelago*, by Alfred Russel Wallace. London: Macmillan and Co., 1869.

rubbed dry, although it is not fair to judge on this point between a young ape and the hairless, sensitive infant of civilisation. It might be different with the Aïno, if we may trust the Japanese reports of the hairiness of its parents, or even with the baby-swimmer of Polynesia. The mias, at least, as our author tells us, seemed to be perfectly happy under the process, "lying quite still, with its arms and legs stretched out, while I thoroughly brushed the long hair of its back and arms."

The way in which it expressed approval or dislike of its food was amusing, and much akin to that usually supposed to be characteristic of human infancy. "Thus," says Mr. Wallace, "the poor little thing would lick its lips, draw in its cheeks, and turn up its eyes with an expression of the most supreme satisfaction when it had a mouthful particularly to its taste. On the other hand, when its food was not sufficiently sweet or palatable, it would turn the mouthful about with its tongue for a moment as if trying to extract what flavour there was, and then push it all out between its lips. If the same food was continued, it would set up a scream and kick about violently, exactly like a baby in a passion." This screaming was its usual plan of attracting attention if it thought itself neglected, although it showed its superiority over the human infant by becoming quiet after awhile if its cries were not attended to, only, however, to renew them again immediately it heard anyone's footstep. Unfortunately, Mr. Wallace was not able to keep this interesting little animal longer than the period we have named; but even in its illness it presented phenomena such as those exhibited by man. It had an attack of diarrhœa, of which, however, it was cured by a dose of castor-oil, but it soon afterwards presented symptoms which "were exactly those of intermittent fever, accompanied by watery swellings on the feet and head." Of this disease it died, much it may be well imagined to our author's regret.

As to the habits of the adult mias, Mr. Wallace gives us some interesting information. According to him, the representations of its walking with a stick are entirely imaginary, and he says that "the orang never walks erect unless when using its hands to support itself by branches overhead, or when attacked." Indeed, it appears seldom to quit the trees, along the branches of which it walks "almost as quickly as a person can run through the forest beneath." The mias appears to be a remarkably unsocial animal. Mr. Wallace says he never saw two full-grown ones together, although both males and females are occasionally seen with half-grown young ones, or three or four young ones may be in company. The liking of the mias for unripe, sour fruits is remarkable, but its most curious habit is that of

making a nest for use at night. Mr. Wallace observed this in a male animal he had wounded, and which immediately sought a place of safety at the top of an immense tree. "It was very interesting," says our author, "to see how well he had chosen his place, and how rapidly he stretched out his unwounded arm in every direction, breaking off good sized boughs with the greatest ease, and laying them back across each other, so that, in a few minutes, he had formed a compact mass of foliage which entirely concealed him from our sight. Mr. Wallace records that on three occasions he observed the mias to throw down branches when irritated, although he appears to think that this habit is confined to the female animal; probably dictated by a desire to protect her young.

The limited range within which the large man-like apes are met with is very remarkable. There can be little doubt that, in the Malayan Archipelago, the mias is restricted to the islands of Sumatra and Borneo, which, as our author observes, are almost the last inhabited by the higher mammalia. It may be, perhaps, that the reason why this animal is confined to certain districts of those islands will, in some measure, also explain its absence from the other islands. Thus, in Borneo it is found only "when the country is low-level and swampy, and at the same time covered with a lofty virgin forest," which appears to be necessary to the "comfortable existence" of the mias. It disappears when the country "becomes slightly elevated, and the soil dry." Mr. Wallace refers to several exaggerated statements as to the size of the mias. One, which was described by the sailors who killed it as being seven feet high, is found, on measuring its skin, to be only about four feet in height. The largest of nine adult males measured by our author himself, stood only four feet two inches when fully erect, the extent of the outstretched arms of the whole series varying "from seven feet two inches to seven feet eight inches, and the width of the face from ten inches to thirteen inches and a half." The mias is more remarkable for strength than for height; and Mr. Wallace was told by the natives, that of all the animals of the forest only the crocodile and the python dare attack it: even these are beaten in the conflict which ensues.

Although Mr. Wallace during his residence in the Malayan Archipelago was chiefly engaged in the practical study of natural history, yet so good an observer could not help gleanings much information respecting the races of man with whom he came in contact. The anthropological details he gives are of great value, although, perhaps, they are somewhat directed towards the support of a particular theory. Mr. Wallace says that "before he had arrived at the conviction that the eastern and western halves of the Archipelago belonged to distinct

primary regions of the earth, I had been led to group the natives of the Archipelago under two decidedly distinct races." When, therefore, he found that there was this separation between the eastern and western halves of the archipelago, our author would naturally look for the marks of distinction between the races of man inhabiting them, and it may be that he did not sufficiently notice those which had the opposite tendency. We are quite willing, however, to accept Mr. Wallace's data, and to try the justice of his conclusions by the evidence furnished by them. Mr. Earle some time ago pointed out "that a shallow sea connected the great islands of Sumatra, Java, and Borneo with the Asiatic continent, with which their natural productions generally agreed; while a similar shallow sea connected New Guinea and some of the adjacent islands to Australia, all being characterised by the presence of marsupials." The truth of this important statement is now confirmed by Mr. Wallace, and the details he gives in its support and the conclusions arrived at from them form the most valuable part of the work before us. It may now be taken as settled that there is a strong contrast between the natural productions of the eastern and western halves of the area comprised in the Malayan Archipelago; the especial importance of this fact to anthropologists being that there is apparently an analogous contrast between the human races inhabiting this area. The line of separation, however, owing to the migratory habits of the Malays, being somewhat eastward of that which divides the Indo-Malayan and Austro-Malayan geographical regions. According to Mr. Wallace, this line is, however, clearly traceable, and it is marked in the valuable physical map in illustration of these conclusions given in the first volume of his work. On the subject of the distribution of the human race in the Malayan Archipelago, our author says, "I believe that all the peoples of the various islands can be grouped either with the Malays or the Papuans; and that these two have no traceable affinity to each other. I believe, further, that all the races east of the line I have drawn have more affinity for each other than they have for any of the races west of that line; that, in fact, the Asiatic races include the Malays, and all have a continental origin, while the Pacific races, including all to the east of the former (except, perhaps, some in the north Pacific) are derived, not from any existing continent, but from lands which now exist or have recently existed in the Pacific Ocean." Mr. Wallace is undoubtedly correct when he says that in this conclusion he differs from most other writers on the subject. He is not singular in ascribing an Asiatic affinity to the Malays—a question which is, however, entirely distinct from that of their continental origin, as the dialects of their language are placed by philologists in the southern division of the

Turanian family of languages, and this conclusion is confirmed by the researches of anthropologists. Nor is Mr. Wallace alone in supposing the Papuans, with whom he classes the Polynesian islanders, to have had a local origin. This has long been a favourite idea, of French writers more especially, although we had thought it to be now sufficiently established that the ancestors of the present inhabitants of the Pacific islands reached them by oceanic migration from the Malayan archipelago. This would not, however, materially affect our author's position if the sacred island of the Polynesians can, as Mr. Williams suggests, be identified with *Bouru*, an island adjoining Ceram to the west of and within the Austro-Malayan region, although at present occupied by both Malays and Papuans. The important conclusion in which Mr. Wallace is almost singular is that these peoples belong to totally distinct races. He says, "Observation soon showed me that Malays and Papuans differed radically in every physical, mental, and moral character." If this be so, much labour has been wasted by other writers, whose chief efforts have been directed to ascertaining whether the Malays or the Papuans are the most primitive people, nearly all of them agreeing that one was derived from the other, although differing as to the actual relation between them. If, as Mr. Wallace supposes, these races have had different places of origin, there can be no question of priority, and we will now shortly consider the data furnished in support of the conclusion that they belong to totally distinct branches of the human family.

When Mr. Wallace visited the Ké Islands and there saw the Papuans at home, he was at once confirmed in the opinion he had already formed that the Papuans and the Malays belong to "two of the most distinct and strongly marked races that the earth contains." "Had I been blind," he says, "I could have been certain that these islanders were not Malays. The loud, rapid, eager tones, the incessant motion, the intense vital activity manifested in speech and action, are the very antipodes of the quiet, unimpulsive unanimated Malay. These Ké men came up singing and shouting, dipping their paddles deep in the water and throwing up clouds of spray; as they approached nearer they stood up in their canoes and increased their noise and gesticulations; and on coming alongside, without asking leave and without a moment's hesitation, the greater part of them scrambled up on our deck just as if they were come to take possession of a captured vessel. Then commenced a scene of indescribable confusion. These forty black, naked, mop-headed savages seemed intoxicated with joy and excitement. Not one of them could remain still for a moment. Every individual of our crew was in turn surrounded and examined, asked for tobacco or arrack, grinned at and deserted for another, all talked at once,

and our captain was regularly mobbed by the chief men, who wanted to be employed to tow us in, and who begged vociferously to be paid in advance. A few presents of tobacco made their eyes glisten; they would express their satisfaction by grins and shouts, by rolling on deck, or by a headlong leap overboard. Schoolboys on an unexpected holiday, Irishmen at a fair, or midshipmen on shore, would give a faint idea of the exuberant animal enjoyment of these people. Under similar circumstances Malays *could* not behave as these Papuans did. If they came on board a vessel (after asking permission) not a word would be at first spoken, except a few compliments, and only after some time, and very cautiously, would any approach be made to business. One would speak at a time, with a low voice and great deliberation, and the mode of making a bargain would be by quietly refusing all your offers, or even going away without saying another word about the matter, unless you advanced your price to what they were willing to accept." Well might the Malayan crew be scandalised by the boisterous conduct of their Papuan visitors. Mr. Wallace relies more on the diversity of moral features to prove difference of race than on physical peculiarities, although he declares that these are strongly marked. He says; "The Malay face is of the Mongolian type, broad and somewhat flat. The brows are depressed, the mouth wide, but not projecting, and the nose small and well formed but for the great dilatation of the nostrils. The face is smooth, and rarely develops the trace of a beard; the hair black, coarse and perfectly straight. The Papuan, on the other hand, has a face which we may say is compressed and projecting. The brows are protuberant and overhanging, the mouth large and prominent, while the nose is very large, the apex elongated downwards, the ridge thick, and the nostrils large. It is an obtrusive and remarkable feature in the countenance, the very reverse of what obtains in the Malay face. The twisted beard and frizzly hair," to which should be added the "sooty blackness" of the skin, "complete this remarkable contrast."

The contrast drawn by Mr. Wallace between these races is certainly a remarkable one, and if it can be established that the peculiarities ascribed to each are characteristic of all the peoples belonging to the particular stock, we think our author's opinion, that there is as much moral and physical difference between the Malayan and Papuan races "as between the red Indians of South America and the negroes of Guinea on the opposite side of the Atlantic" (although, perhaps, the statement is somewhat exaggerated), is substantially justified. But are these peculiarities so constant and so strongly marked as our author supposes? Now, after comparing the portrait of the young dyak of Borneo given in the work before us, with the various Polyne-

sian faces depicted in the Rev. J. G. Wood's *Natural History of Man*, and also with that of the Javan chief, we certainly think not. The Javan chief and the dyak appear to us to differ in appearance much more than do the latter and some of the Polynesian islanders. The Javan has a Mongolic cast of countenance, which the Dyak clearly does *not possess*, although we do not deny that it is found among the Dyak peoples of Borneo. This difference in feature has its counterpart in that of mental phenomena. Thus Mr. Wallace says: "I am inclined to rank the Dyaks above the Malays in mental capacity, while in moral character they are undoubtedly superior to them. . . . They are more lively, more talkative, less secretive, and less suspicious than the Malay, and are therefore pleasanter companions. The Malay boys have little inclination for active sports and games, which form quite a feature in the life of the Dyak youths, who, besides outdoor games of skill and strength, possess a variety of indoor amusements. . . . These amusements indicate a capacity of civilisation, an aptitude to enjoy other than mere sensual pleasures, which might be taken advantage of to elevate the whole intellectual social life." Mr. Wallace gives other interesting details of the amusements of the young Dyaks, especially of a concert without musical instruments, which show that they are far from being of the taciturn disposition ascribed to the Malays. Compare this description with that of the Aru Islanders whom Mr. Wallace met with at Dobbo. He says "The natives here, even those who seem to be of pure Papuan race, were much more reserved and taciturn than those of Ké. This is possibly because I only saw them as yet among strangers and in small parties. One must see the savage at home to know what he really is. Even here, however, the Papuan character sometimes breaks out. Little boys sing cheerfully as they walk along, or talk aloud to themselves (quite a negro characteristic); and, try all they can, the men cannot conceal their emotions in the true Malay fashion." It is true that the same Papuans, if they had not been in contact with another race, might have been equally loud and impulsive in their habits. This is, however, all the more important in relation to the question at issue. It shows the influence of constraint and it leads us to believe that the *reserve* which Mr. Wallace treats as so marked a peculiarity of the Malay character is almost wholly the result of a similar state of circumstances, much intensified. Mr. Wallace when explaining the fact that, notwithstanding their greater intelligence, the Papuans have not yet made any such advance towards civilisation as that exhibited by the Malays, says; "It must be remembered, however, that for centuries the Malays have been influenced by Hindoo, Chinese, and Arabic immigration, whereas the Papuan race has only been subjected to the very partial and local in-

fluence of Malay traders." The true Malays, indeed, present every evidence of having been for a very long period subject to a tyranny which while developing certain faculties has crushed out almost the entire energy of life, an observation which, in effect, Sir Stamford Raffles long since made of the Javans. We see a similar phenomenon to some extent among the Chinese, and much more so among the kindred peoples of Siam and Burmah, whose customs it cannot be doubted present a very close resemblance to those of the civilised Malays. Where this influence is weaker, as in the case of the Dyaks, we see a nearer approach in mental characteristics to the Papuans, whose exuberance of manner is caused by the possession of a vital energy not yet depressed by the tyranny of authority and by the influence of a civilisation he is little fitted to receive. It will be seen from this that we do not attach the importance our author does to the mental peculiarities of the Malays.

It will be said, however, that their physical peculiarities at least are sufficient to completely separate the Malayan and the Papuan races. We are not, however, by any means convinced of this. The influence of the mind over the body is not yet properly understood, and when this influence is added to that of food and occupation, it is by no means clear that the physical appearance may not undergo as great a change as the mental phenomena themselves. We have seen that the cultivated Javan much more nearly approaches the Chinese Mongol than does the almost uncivilized Dyak. In relation to this question we would notice certain peoples who appear to possess both Malayan and Papuan characteristics naturally, and not as the result of a mixture of these races. Such are the *Alfuros*, or indigenes of Gilolo, whom Mr. Wallace describes as "an industrious and enterprising" race, and of whom he says:—"These people are quite distinct from the Malays, and almost equally so from the Papuans." In another place he says:—"Their stature and their features, as well as their disposition and habits, are almost the same as those of the Papuans; their hair is semi-Papuan, neither straight, smooth, and glossy, like all true Malays, nor so frizzly and woolly as the perfect Papuan type, but always crisp, waved, and rough, such as often occurs among the true Papuans, but never among the Malays. Their colour alone is often exactly that of the Malays, or even lighter." The indigenes of both Ceram and Bouru are very similar to the Alfuros of Gilolo, where in fact our author thinks he has found the exact boundary line between the Malay and Papuan races. Not the point of transition, however, for this Mr. Wallace declares does not exist, although he includes among the Papuans the light and dark peoples of Polynesia. On this subject he says, "I believe that the numerous

intermediate forms that occur among the countless islands of the Pacific, are not merely the result of a mixture of these races, but are to some extent truly intermediate or transitional, and that the brown and the black, the Papuan, the natives of Gilolo and Ceram, the Fijian, the inhabitants of the Sandwich Islands and those of New Zealand, are all varying forms of one great Oceanic or Polynesian race." Mr. Wallace indeed suggests the possibility of a Malayan or Mongolic influence, at a date long since passed, in the production of the brown Polynesians. It can hardly have been the former, seeing that the Polynesians sometimes present that obliqueness of the eye so characteristic of the Mongol, and which our author tells us the Malays never possess. Nevertheless, however this may be decided, the Alfuros of Gilolo appear to be a pure race, making a certain approach towards the Malay type, and such seems to be the case with the people of Minahasa (part of Celebes), whom our author describes as differing much "from any other people in the Archipelago." Now, although we are inclined to agree with our author in his opinion that these tribes who make some approach to the Malay type are not transitional varieties, and that there is in fact a real difference between the Malayan and Papuan races, yet we much doubt whether this difference is of so "radical" a character as he asserts. It is not at all impossible, although one of these races has not originated from the other, yet that they may both have sprung from the same root. It is strange, considering the important position in relation to the great Austro-Malayan area held by Australia, that Mr. Wallace should say so little about its aboriginal inhabitants. This continent is closely connected with the Papuan region of the Malayan Archipelago, and according to our author's views, we ought to find as close an affinity between the indigenes of the several parts of this region as between their fauna and flora. This is hardly the case, however, since in the straight hair of the natives of Northern Australia (as depicted by Mr. Earle) and of many other parts of the continent, an approach is made to the Alfuros of Gilolo, if not still further to the Malays themselves. It is noteworthy, moreover, that an affinity has been found by several observers between the Australian aborigines and those of southern India, which of course must form part of the Asiatic area to which Mr. Wallace refers the origin of the Malayan race. We should have been glad if our author had told us whether these aboriginal tribes of southern India have any affinity with the "Negritos" of the Philippines or the "Semangs" of the Malay peninsula. He says the latter "agree very closely in physical characteristics with each other, and with the Andaman islanders, while they differ in a marked manner from every Papuan race," although they are a quite distinct race from the Malay.

Whether this continental negritic element will not be found to form a connecting link, through the aborigines of Australia, between the Malays and Papuans, is yet uncertain, but the peculiar position of the Andaman islanders would appear to point to this conclusion, there being undoubtedly an approach in these people to the aborigines of Tasmania, although by many writers they are classed with the Malays.

There is a very important phenomenon, to which little attention has as yet been drawn, and which may assist in settling this vexed question as to the relationship between the dark and light races of the Malayan Archipelago. We refer to the existence side by side, not merely in this locality but also at other points around the basin of the Indian Ocean, of peoples having a similar relationship to each other. Such are the Hottentots and the Kaffirs, the Hovas and the dark tribes of Madagascar, the light and the dark hill tribes of India. It is remarkable, moreover, that while all the dark tribes in these several localities have an evident affinity, the same may be said of the light tribes as well. Thus Mr. Wallace several times speaks of the "negro" characteristics of the Papuans, in which, if we substitute "African" for "negro," he agrees with many other observers. Again, reference has often been made to the Mongolic features of the Hovas and Hottentots, this character furnishing the chief ground of their supposed affinity with the Malays, which is confirmed by their habits and the inferiority of their intelligence in comparison with that of their dark neighbours. The Rev. William Ellis, however, was struck, not only with the *Polynesian* characteristics of the Hovas, but also with "the remarkably European cast of many of their countenances," a likeness which has been often noticed in the inhabitants of the South Sea Islands themselves. Thus, while on the one hand, the *Hovas* are said to resemble the Mongolic element of the Malayan race, on the other hand they are said to approach that of the Polynesian Papuans. We shall not be surprised if in Madagascar be found the key to the problem of the relationship of the races of the Malayan Archipelago. If the dark and light tribes of this great island are sprung from the same stock, and there is not at present the slightest evidence to the contrary, the same must be true of the dark and light races of the Archipelago. While, therefore, in the aborigines of Australia, we may perhaps have the most direct issue of the primitive stock from which these races have sprung, we see in the Madacasses, or in a cognate race which has long since disappeared, the secondary human centre from which both Malays and Papuans have branched off. It is possible that Mr. Wallace, although he asserts confidently that the Malays cannot have originated from the Papuans, or *vice versa*, may yet admit that

these distinct races may have sprung from a common stock at a very distant date. He, indeed, appears to believe in the former existence of a land connection of Celebes with Madagascar, and at an earlier period even with the African continent itself, and we see no reason why this now-submerged area should not be used to explain the present distribution of human races as well as to account for the peculiar affinities of the fauna and flora of various tropical regions.

According to this view we think it not at all difficult to understand how two races, apparently so distinct as the Malays and the Papuans, could have originated from a common stock, such as that of the darker tribes of Madagascar, who are directly connected with the one, and indirectly, through the Hovas, with the other. While Mr. Wallace allows that "the continued influence of physical conditions, and of natural selection," can have developed so great a difference as we often find between the dark Papuan tribes of the Austro-Malayan area and the fair tribes of Polynesia, he can hardly deny that similar influences, extending over a longer period, may have had the result we contend for. It is true that he says that nowhere so well as in the Malayan Archipelago "does the ancient doctrine—that differences or similarities in the various forms of life that inhabit different countries, are due to corresponding physical differences or similarities in the countries themselves—meet with so direct and palpable a contradiction." This, however, states merely half the question. The ultimate result depends on the state in which these forms were when first brought under varying physical conditions; and the length of time during which the new conditions have operated. Thus, if we imagine the southern hemisphere at the time when it presented vast continents, now submerged, to have been peopled by a homogeneous dark race; this race may, under later varying conditions of life, have given rise to several varieties, which, after the lapse of many ages, would show the differences we see now existing between the several branches of the Papuan stock and the dark peoples of the Asiatic and African continents. Again, there is nothing to prevent a still different series of geographical changes, giving rise to physical conditions which should originate an apparently quite distinct race, such as we see in the Hovas and the Malays, when compared with the darker tribes around them. We have an analogous case in the Semitic peoples, whose African affinities are gradually becoming recognised, and who present as great physical differences among themselves as do the dark and light tribes of Madagascar. In the hill-men, or *Arfaks*, of New Guinea we may perhaps see what the beginning of such a change would be. These people are described by Mr. Wallace as differing much in physical features:

"They are generally black, but some were brown like Malays. Their hair, though always more or less frizzly, was sometimes short and matted, instead of being long, loose, and woolly; and this seemed to be a constitutional difference, not the effect of care and cultivation." The tendency of our remarks is undoubtedly to derive all the races of man from a single primitive stock, but this accords, we believe, with Mr. Wallace's own expressed opinions. For this reason, also, we think he has spoken too strongly of the "radical" difference between the Malays and Papuans; and perhaps, after all, this is owing, in a measure, to a certain vagueness in his use of scientific words, which is to be deplored. For instance, our author speaks of the "races" of Polynesia belonging to the Papuan "race," and he adds that the Malays and Papuans cannot have sprung from the same "race." It would have been much better to use in these several cases the different terms, *peoples*, *race*, and *stock*. Again, our author speaks of the "negroes" of Africa, and he refers to Professor Huxley, as maintaining that "the Papuans are more closely allied to the negroes of Africa than to any other race." By "negro" is usually understood a native of Western Africa, to whom the Papuans do not bear nearly so much resemblance as they do to other African peoples. Probably, however, the real negro is not intended; and why not, if so, use a term from which the meaning would be clearly understood?

In his appendix Mr. Wallace gives us certain notes on the crania of the Malayan, Papuan, and African races. The conclusion he founds on the measurements derived from Dr. J. Barnard Davis, *Thesaurus Craniorum*, is that "the Australians have the smallest crania, the Polynesians the largest; the negroes, the Malays, and Papuans, not differing perceptibly in size." He adds, that "this accords very well with what we know of their mental activity and capacity for civilisation." The Australians, moreover, have not only the *longest* but also the *lowest* skulls; the negroes coming next to them in both these particulars, and the Malays having the shortest and the highest skulls; while the true Papuan skulls are longer than, and at the same time equal in height to, those of the Polynesian islanders. Although we think Professor Huxley is wrong in giving so little weight to characters derived from the skull in the classification of mankind; yet we can, on the whole, subscribe to Mr. Wallace's opinion, "that if we had a much more extensive series of crania the averages might furnish tolerably reliable race characters, although, owing to the large amount of individual variation, they would never be of any use in single examples, or even when moderate numbers only could be compared." So far as a reliable conclusion can be deduced from the data above referred to, we have the curious fact established that, while the race

which is the lowest in the scale of intelligence, the Australian, has the *longest* and *lowest* skull, the Malays, who have the shortest and highest skulls have not so great a cranial capacity; nor, according to Mr. Wallace's own account, have they so active an intellect as the Polynesians. How far this result is owing to an undue development of the anterior lobes of the brain we are not in a position to say, but such a condition would undoubtedly tend to lessen the quickness of mental operation. As to the bearing of these facts on the notion of the origin of the Malays and Papuans, and with them the other dark and light peoples of the tropics from a common stock, we think they may be used to support this conclusion. The nearest approach to the primitive stock we have already found in the Australians, whose cranial development is the lowest in the scale. Next to these come the dark tribes of the Papuans and negroes; then, in certain characters, the Polynesians; and, lastly, the Malays, the increase of whose skulls in height is quite sufficient to account for the correlative change in other physical characters presented by them, and for their mental peculiarities. This assertion may perhaps be disputed, but we are convinced of its truth, and that in the proper understanding of the correlation of the physical and mental characters, and in that of the brain, with the other organs of the physical structure, can the solution of the vexed question of the origination of races be found.

We have not space to refer to the vocabularies collected by Mr. Wallace, beyond saying that they present distinct verbal affinities with the Malagays, and with certain East African dialects. Nor can we dwell so fully as we could wish on several matters incidentally mentioned by our author, which show a primitive connexion between the Malays and the Polynesians on the one hand, and the Malays and the peoples of the African continent on the other, which has yet to be explained. Such are the amusements of the Dyak children. The "cat's cradle," which Mr. Wallace found the young Dyaks knew so much about, is equally well known to the Polynesian Islanders. Again, the bellows used by the people of Lambock are the same as those found not only throughout the Malayan Archipelago, but also in Madagascar, and, with little alteration, in most parts of the African continent. The custom of "somiali," practised by the Timorese, is no doubt, as our author states, exactly equivalent to the Polynesian *tapu*, but it is not by any means unknown on the western side of the Indian Ocean. The disuse of the common fowl as an article of food, which probably has had a superstitious origin, is a wide-spread African custom, and it is curious to find that in various parts of the Malayan Archipelago, as in Africa, from the Congo to the Shire, and even to Senegambia, the village markets are held under the shade of the fig-tree. With these

remarks we must bring this notice to a close ; and, notwithstanding we have seen fit to criticise some of our author's conclusions, we welcome the work before us as a valuable contribution to anthropological scientific literature, and we recommend it to our readers, not only on this ground, but also as containing much other interesting matter relating to the Malay Archipelago and the productions of its numerous islands. The whole design of the work is much above that of an ordinary book of travels, and even in the absence of any very stirring incidents, it will amply repay the perusal, not merely of the scientific, but of the general reader.

BALDWIN ON HISTORIC ANTHROPOLOGY.*

MR. BALDWIN'S work is of considerable interest to the student of historic anthropology or of ethnology. The study of the traditions, mythologies, fragmentary records, and mouldering remains of the prehistoric ages proves that civilisation was more ancient than history. The Ethiopians or Cushites of Arabia have no history, but they had a civilisation of no mean order, and a commercial and maritime enterprise which induced and enabled them to colonize the ancient world. In the early traditions and literary records of the Greeks, Arabia is described as Ethiopia. The countries on the Upper Nile were called Ethiopia, because they were first colonies or dependent provinces of the more ancient kingdom of Ethiopia in what is now called Arabia. Mr. Forster, in his historical geography of the Old and New Testament, says, "it is matter of fact familiar to the learned reader that the names Ethiopia and Ethiopians are frequently substituted in our English version of the Old Testament, where the Hebrew preserves the proper name of Cush, and the name 'Cush,' when so applied in Scripture, belongs uniformly not to the African, but to the Asiatic Ethiopia or Arabia" (vol. i, p. 12).

Strabo, correcting a popular error of the same kind in his day, says: "If the moderns have confined the appellation Ethiopians to those only who dwell near Egypt, this must not be allowed to interfere with the meaning of the ancients." Professor Rawlinson informs us that the uniform voice of primitive antiquity spoke of the Ethiopians as a

* *Prehistoric Nations: or, Enquiries concerning some of the Great Peoples and Civilisations of Antiquity, and their probable relation to a still older civilisation of the Ethiopians or Cushites of Arabia.* By John D. Baldwin, M.A. London: Sampson Low, Son, and Marston, Fleet Street, 1869.

single race dwelling on the shores of the Southern Ocean, and from India to the Pillars of Hercules. It is of this ancient and interesting race that Mr. Baldwin has gathered up all the scattered records and notices, and has made out a case in their favour claiming for them the earliest prehistoric importance in the civilisation of mankind.

In the earliest Hebrew traditions, older probably than Abraham, Cush, translated Ethiopia, is mentioned as a country or geographical division of the earth. In the tenth chapter of Genesis we are told that Canaan, Cush, Miriam, and Phut, were the children of Ham ; and Rawlinson, in his *Herodotus*, informs us that the Hamitic races seem to have been the first people of Western Asia. These Hamites were the founders of most of the cities of antiquity, which sometimes have retained their primitive names, and sometimes appear to have exchanged them for Semitic appellations, the descendants of Cush, the eldest son of Ham, are supposed to have resided for many ages in Chusistan, or Pusiana, a district to the south-east of Babylon and west of Persia. The great period of the Cushite race had closed many generations before the time of Homer, but great communities and offshoots remained not only in Egypt, but also in Southern Arabia, in Phœnicia, and Africa. This active and enterprising people of ancient Arabia, whose territory appears to be double that of France, were more advanced than the rest of the world in civilisation, as may be proved by their commercial and maritime enterprise. Their geographical position gave them considerable advantages, for lying between the Red Sea and the Persian Gulf, they had at the same time at their command the shores of the Indian Ocean and the Mediterranean Sea. Hoeven says :—

“From the remotest time to the present the Ethiopians have been one of the most celebrated, and yet the most mysterious of nations. In the earliest traditions of nearly all the more civilised nations of antiquity the name of this distant people is found. The annals of the Egyptian priests are full of them—the nations of inner Asia on the Euphrates and the Tigris have interwoven the fictions of the Ethiopians with their own traditions of the wars and conquests of their heroes ; and at a period equally remote they glimmer in the Greek mythology. When the Greeks scarcely knew Italy and Sicily by name, the Ethiopians were celebrated in the verses of their poets ; and when the faint gleam of tradition and fable gives way to the clear light of history the lustre of the Ethiopians is not diminished. They still continue to be the objects of curiosity and admiration, and the pen of clear-sighted and cautious historians often places them in the highest rank of knowledge and civilisation.”

Perhaps the earliest offshoot of the Cushite race was the Chaldean. The Assyrian empire was preceded by a much older kingdom of

Chaldea, which existed during a much longer period of time, and in matters of race and language had but little in common with the Assyrians.

The old Sanscrit writings of Hindostan describe the country of Cush as extending from the shores of the Mediterranean Sea to the borders of India, and they call it Cusha Dwipa. A regular history of Chaldea was written by Berosus in Greek three hundred years before the Christian era. Berosus was a Chaldean priest of Belus, and the materials of his history were supplied by archives then existing in the temple of Belus at Babylon; but, though the work of Berosus is lost, fragments have come down to us in the writings of Josephus, Eusebius, Syncellus, and several Christian fathers. Berosus begins with a dynasty of eighty-six kings, of whose time he knew nothing. The astronomical records found at Babylon began with the date of 2234 B.C., but Rawlinson found a Cushite or Hamitic inscription in Susiana in which there is a date that goes back 3200 years before Christ.

The three great prehistoric historians, if we may be allowed to use such an anachronism (because their histories were, in the main, lost), we refer to Manetho, Berosus, and Sanchoniathon, have been too much overlooked and discredited by modern authors. Modern research has, however, done much to increase the confidence in which we can rely on their statements as to the antiquity of man. Bunsen has done much to corroborate what was too universally discredited in the records of Manetho—the discoveries of modern days have disposed us to place more reliance on the fragments of Berosus and Sanchoniathon, which have come down to posterity in the writing of others; and if, as Sir Isaac Newton admits, letters were known in the Abrahamic line for some centuries before Moses—if they were the Chaldaic letters, which are nearly similar to the Samaritan and old Phenician, we have a clue in the Cushite characters which may lead us by indisputable steps to the first inventors of alphabetic writing.

A good summary of what has been found in the ruins of the Chaldean cities is given in the first volume of George Rawlinson's *Five Great Monarchies of the Ancient World*. Our author considers it of considerable importance in his line of argument, and derived, as it is, from undoubted facts, we think the following brief conclusions may be considered incontrovertible:—

1st.—The ruins furnish, what appears to be, conclusive evidence that civilisation was brought to Chaldea from Ethiopia, that is to say, from Arabia. In the inscriptions the two countries are connected in such a way as to make no other conclusion possible. Their vernacular name for Ethiopia is Mirukh, and its maritime enterprise is distinctly recognised.

2nd.—The oldest city and first capital was Ur. It seems to be understood that the settlement of the country began with the building of Ur. At a later period Erech was for a time the royal city, but Nipher, or Niffer, was the name of the city of Belus, or the more ancient Babylon.

3rd.—The language of ancient Chaldea found abundantly in these ruins and the forms of the letters are similar to those found in the ruins of Southern Arabia.

Thus not only is the statement of Berosus confirmed that Chaldea was a cultivated and flourishing nation governed by kings long before the time of Babylon, but the identity of language argues similarity of origin.

Sanchoniathon, the most ancient, as also the most celebrated Phœnician historian (several fragments of whose history have been preserved by Eusebius) attributes the art of alphabetic writing to the Phœnicians or Cushite race; and both Greek and Roman authors agree in receiving the statement which Pliny and Lucan do not hesitate to acknowledge,

Ipsa gens Phœnicum in gloria magna literarum inventionis et siderum navaliumque ac bellicarum artium.—*Pliny, Nat. His., lib. v, cap. 12.*

Phœnices primi, famæ si creditur ausi

Mansuram rudibus voceram signare figuris.—*Lucan, Lib. iii, v. 220*

But these inventors of alphabetic writing were also well versed in astronomy and navigation. They were the greatest commercial people of all antiquity and engrossed all the commerce of the western world. If the art of alphabetic writing originated with the Phœnicians, we must attribute it to a very early period. If Ur was the most ancient city, we find in the history of Abraham that at the age of seventy years he left it to settle in Haran in Canaan. Arithmetic and astronomy were probably carried by Abraham into Egypt with the art of alphabetic writing. Be that as it may, the antiquity of the city of Hur is indisputable. It was situated at the mouth of the Euphrates, with the open sea before it. But its ruins are now one hundred and fifty miles from the sea—the Persian Gulf having retired that distance, from the sediment brought down by the Euphrates and the Tigris. So great a geological change carries us back into the depths of antiquity; yet the epoch at which the city of Hur was thus founded might be made matter of calculation to one like Sir Charles Lyell, who has speculated on the age of the valley of the Mississippi. The question is a simple one, namely, how much per century does the Persian Gulf retire, and in how many years would the distance equal one hundred and fifty miles?

Dr. Forster, in the Appendix to his work on Arabian Geography, gloried over the Himyaritic inscriptions as “the oldest language in the

world," and "the first alphabet of mankind;" and this alphabet the Phenicians carried with them to southern and western Europe. The names of the letters and some of the forms seem to indicate some hieroglyphic origin. *Aleph* means an ox, *beth* a house or temple, *gimel* a camel, the great beast of burden of the desert. Sir William Drummond says, in his "Origines," there seems to be no way of accounting for the early use of letters among so many different nations, or for the resemblance which existed between some of the graphic symbols employed by those nations, than by supposing hieroglyphic writing among the psalmists; and Sir William Drummond says we can hardly hesitate to assign the original invention to a period before the Hamite race had broken up and divided. Thus Sanchoniathon may have affirmed, with some truth, that he had perused the writings of Thoth, who is said to have taught the descendants of Cush the art of writing.

In 1862-63 Mr. William Gifford Palgrave, who had long resided in the east, was well versed in the Arabic language, and well acquainted with Mohamedan lore, spent six months in Central Arabia travelling through it from west to east. He began his journey, labouring under a popular delusion, supposing, like most people, that Arabia was almost exclusively the territory of nomads—the wandering Bedouins. He accordingly made his preparations for traffic and intercourse with the natives in accordance with this supposition, which he soon found was a grievous mistake. He found, instead of wandering Bedouins, who were rather described as an inferior race, a rich and beautiful country, a settled and civilised people—cities, towns, and villages, agriculture, and a regular government. Central Arabia is an extensive and fertile land, diversified by hills and valleys, its great plateau comprising half of the whole peninsula, about five hundred thousand square miles, twice the extent of France. He found it occupied by two kingdoms, Shomer and Nejed, the former consisting of five, the latter of eleven provinces; the soil belonged to its cultivators and not to the government. In Sedyr, especially, he found an elegant and copious hospitality conducted with a dignified and even refined politeness. Hayel, the capital of Shomer, is surrounded with fortifications, with bastion towers, some round some square, and large folding-gates at intervals. It had upwards of twenty thousand inhabitants. Riad, the capital of Nejed, is large and square, with high towers and strong walls, a mass of roofs and terraces, and for full three miles over the surrounding plain waved a sea of palm trees above green fields and well-watered gardens; while southward the valley opened into the great and more fertile plains of Yemanah, filled with groves and villages. In the province of Sedyr, Mr. Palgrave reports "the dominant tone of society

is that of dignified and even refined politeness." The industry, culture, and general condition of the people seemed above what is found in neighbouring countries. Coming to the plain of Kafseem he says, "Before us, to the utmost horizon, stretched an immense plain, studded with towns and villages, towers and groves, all steeped in the dazzling noon, and announcing every where opulence and activity." It is very remarkable how ignorant we have been of the existing state and condition of the country, as well as the people of modern Arabia. There is no reason to doubt that a considerable portion of that which is now sand and desert, in old times was well cultivated and full of populous life, as the numerous ruins strewed over the surface still testify.

"This remarkable country," says Mr. Baldwin, "had no lack of fitness to be the home of a great people; and in the days when Balbec and Petra were flourishing cities, and Arabia was the busy commercial centre of the civilised world, it could have supported a hundred million people as easily as France sustains now forty millions. It had no lack of resources for the great part played by its people in human affairs. If England and Spain would colonise and fill the whole American continent in the space of two or three centuries, what might not have been done by the ancient Arabians in the course of twenty centuries?"

Mr. Baldwin has, we think, very successfully demonstrated the claims of the Arabian Peninsula to a much greater importance in the civilisation of the human race than historians had previously imagined. The relations of the ancient Cushites to the earliest developments of civilisation in Egypt, Chaldea, Hindustan, and Africa, are worked out with considerable research and acumen. There is much corroboration of Mr. Baldwin's views in the acknowledgment of Sir Henry Rawlinson, who sees a common origin of the Chaldæans and Egyptians, and finds it even in the character of their writing, which he thinks must have been in existence before the two people separated. Lepsius draws the same conclusions, from the resemblance of Egyptian and Cushite writing; thus corroborating what Diodorus Siculus says in his third book, "The Ethiopians say that the Egyptians are a colony drawn out of them by Osiris." And thus we may see the reason why the annals of the Egyptian priests are so full of the Ethiopians, if they played a foremost and wonderful part in the affairs of the world before Egypt became the abode of a civilised community. This is a wide subject and well worthy the attention of linguists and archæologists, and likely to form a new and interesting chapter in the development of pre-historic man. Renan, in his *Histoire Générale des Langues Sémitiques*, in his preface to the second edition, has promised his readers an essay in order to establish that it is necessary to admit into the history of the civilization of the ancient world, a third element

which is neither Semitic nor Aryan, which may be called Ethiopian or Cushite; and he adds, in allusion to the investigations of Oppert, "that if these hypotheses shall be confirmed by a more complete investigation, it will become necessary to establish a group of semitico-Cushite languages, including the Himyaric, the Gheez, the Mahic, and the language of the Babylonian inscriptions.

We confess ourselves somewhat surprised to find that a writer so liberal in his general views as our author should have gone out of his way rather to make some weak and irrational remarks on the development hypothesis of Mr. Darwin. He says very erroneously that "Advocates of what is called the 'development theory,' as well as champions of the narrow chronologies, find it convenient to assign the first appearance of civilisation to a very modern date in the great pre-history past." We are not aware of any passage in Mr. Darwin's works which at all assigns the first appearance of civilisation to a very modern date. Our author, so generally fair and well informed, must have taken a very erroneous view of Mr. Darwin's statements. Sir Charles Lyell, fully adopting, as he does, in the tenth edition of his unrivalled work on geology, the development theory as it has been propounded by Mr. Darwin, is one of the ablest advocates of the antiquity of man, which he carries back indeed far beyond the "narrow chronologies." The origin of man is a very different theme from the antiquity of pre-historic civilisation—and it was scarcely worth while for Mr. Baldwin to allude disparagingly to those painstaking labours of Mr. Darwin, which have led him step by step to his avowed hypothesis, which like the "Nebular Hypothesis" in astronomy, serves at any rate to enlarge our views as to the processes by which our present might have been evolved. It is no degradation of man to say he was created out of the dust of the earth; much less to have been developed through the inferior grades of the animal world.

Although the duties of daily life, and the all absorbing interests of the present must ever occupy the main attention and interest of mankind, we are impelled by an irresistible curiosity to extend our interest and inquiries into the past and the future. The great business of life must ever occupy man's chief attention; but man is a studious being, and never rests without extending his views in every direction, and drawing his inferences as to the antiquity of the world in which he is placed, as well as the race of which he is the present representative of a long line of ancestry. We trace back the thread of history with an ever recurring interest, till we arrive at its extreme limit, which terminates in fable and allegory. Man must have struggled onward and onward for ages before he became a recorder of his own history. It is vain and useless to look for any chronology before man learned

to record—no history can give us satisfactory views of man's antiquity. The short period of a few thousand years which has been adopted by a short-sighted class of theologians, does not afford extent of time necessary for the development of the different phases of civilisation, which come under the cognisance of history, much less of those ages of slow progress, which must have preceded the historic era. The cyclical schemes which computed by tens of thousands and hundreds of thousands the years of man's existence, are more in accordance with probability than the limited period of six thousand years of Archbishop Ussher, and other commentators on the Jewish chronology. Sir Charles Lyell's lowest estimate of the time required to form the present Delta and alluvial plain of the Mississippi is more than one hundred thousand years. Agassiz having ascertained the average rate of coral growth, estimates that the gradual formation of the southern half of Florida must have filled a period of one hundred and fifty thousand years, and yet the whole is of post-tertiary origin; the fossil zoophytes and shells being all of the same species as those now inhabiting the neighbouring sea. These are only two of the many approximating estimates which geologists have been obliged to form to get some relative glimpses of the antiquity of the earth.

Anthropological News.

MEMOIRS OF THE ANTHROPOLOGICAL SOCIETY.—We are glad to hear that the third volume of the *Memoirs* of the Society will be issued to the Fellows and the public subscribers in a few days. The volume will be published by Messrs. Longman and Co., price One Guinea. We understand that this volume will contain a long-expected paper from Dr. John Beddoe, the accomplished President of the Anthropological Society of London, "On the stature and bulk of the inhabitants of the British Islands." We shall hope to be able to give our readers some critical remarks on this volume in our next issue. In the meantime, we congratulate the Fellows of the Society that their third volume of *Memoirs* should contain communications from three of the most distinguished and erudite Anthropologists of this country, viz., Dr. Barnard Davis, Dr. John Beddoe, and Dr. John Thurnam.

M. DE MORTILLET has recently proposed to the French Academy of Sciences a chronological arrangement of caverns and rock-shelters, based upon the distinctive characters of the implements and weapons found in those resorts of our earliest ancestors in western Europe. He defines four epochs, which he names after the stations where they are most typically represented; thus following the example of geologists and of Messrs. His and Rüttimeyer in the *Cra. Helvetica*. The *Moustier Period*, so called from the Grotto of Moustiers, situated in the commune of Peyzac (Dordogne), is characterised by stone axes of the almond or "langue du chat" type, and by flint flakes

smooth on one side, and more or less finely chipped on the other. Instruments of bone are almost entirely wanting. *The Solutré Period*, named from a station at the foot of a magnificent escarpment in the Saône et Loire, is distinguished by the further development of the flint flake, and by the disappearance of the almond-shaped axe. The flakes are finely clipped on both faces and at both ends, and would seem to have furnished the chief domestic tool of the period. Simple flakes are rare, as also are bone implements. The weapon of this period is an angular club, which is again found in the following epoch. In the *Aurignac Period*, named after the classic locality in the Haute Garonne, the number of bone implements increases considerably. The angular club still remains, but the points of spears and arrows are of bone instead of flint; their essential character being that the base contains a cavity for the insertion of the head of the shaft. The quaternary fauna is still largely represented. *The Madeleine Period* (commune de Turzac in the Dordogne) is characterised by arrow and spear-heads of bone and reindeer-horn, so shaped at the lower end that they enter into the shaft, and not the shaft into the head, as during the previous period. There are a number of artistic products. Animals of extinct species disappear, and the fauna is represented by animals now inhabiting colder regions of the reindeer. The famous deposits of Eyzies and Bruniquel in France, Furfooz in Belgium, and Schumened in Wurtemberg, belong to this last period. Following the four epochs enumerated, which may be characterised, as a whole, as the rough stone age, M. de Mortillet places the period of polished stone.

"We have heard lately almost too much about the prehistoric man, and the supply of flint implements, perforated shells, and split marrow-bones, begins to exceed the demand; but a recent discovery in the département de la Dordogne of human skeletons coeval with the mammoths, and undeniably appertaining to the earliest quaternary period, present features of such unusual interest that the French government have sent M. Lartet, the distinguished palæontologist, to make a report on the subject. He reports that the bones of five skeletons have been discovered, and that they belong to some gigantic race whose limbs, both in size and form, must have resembled those of the gorilla. But the simian origin of man must not be inferred from these analogies, as the skulls, of which only three are perfect, afford testimony fatal to this theory, having evidently contained very voluminous brains. The skulls are now in the hands of a committee of *savants*, who are preparing an exhaustive craniological report." — *Pall Mall Gazette*, June 16th, 1869.

BIBLIOGRAPHY OF ANTHROPOLOGICAL LITERATURE.—In our next issue we purpose to give our first issue of a bibliography. Titles of works or papers should be forwarded to us immediately on publication.

We regret to have to record the death of Hugh J. C. Beavan, F.S.A., Barrister-at-Law, and formerly one of the officers of the Anthropological Society of London, at the early age of twenty-eight. Mr. Beavan's chief labour in connexion with the Society was that of editing Georges Pouchet's work on *The Plurality of Races*; a paper of his on "The People of Spain" is also published in the *Memoirs of the Anthropological Society*.

ANTHROPOLOGY AT THE BRITISH ASSOCIATION.—The Anthropological Society of London have appointed a committee to attend, as delegates, the forthcoming meeting of the British Association at Exeter. We hear that a large number of papers are likely to be presented for reading at the Anthro-

pological department; and amongst others, one of considerable local interest, by the President of the Anthropological Society of London (Dr. John Beddoe), on "The Anthropology of Devon and Cornwall." The Honorary Secretaries of the Committee appointed by the Society have announced that they will be happy to take charge of communications on Anthropology, if the same are sent to the rooms of the Society, 4, St. Martin's Place, Charing Cross.

THE ANTHROPOLOGICAL SOCIETY OF MADRID, whose meetings have been delayed for two years, owing to the political changes which Spain has undergone, had their second inaugural meeting on the 21st of February last. Previously they had only had the one meeting, reports of which have already appeared in the *Anthropological Review*. The President is Don Francisco Fernandez Gonzalez; the Secretary, Don Francisco de Asis Delgado Jugo.

THE PRESERVATION OF ANCIENT MONUMENTS.—Recently in the House of Commons Sir H. Verney asked the First Commissioner of Works to consider whether measures could be adopted to place the ancient monuments, now existing in the country, under the protection of some authority which might prevent their destruction. Mr. Layard said that the question was one of very great importance. There were a great many royal and other interesting sepulchral monuments in our cathedrals and churches that had been allowed to fall into decay, and also a great many monuments of national and archaeological interest that were being entirely destroyed. Such a state of things was not creditable to the country; and in France and other countries measures were being taken to preserve such monuments as public property. When he came into office, his attention was directed to this subject, and the first step he took was to endeavour to obtain a list of such monuments as it was thought advisable to place under some kind of protection, and he addressed a letter to the Society of Antiquaries, and requested them to prepare him such a list, if possible. His application was met in the most cordial spirit by Lord Stanhope, the President, and the Fellows of the Society, and they had taken steps which he trusted would enable them to obtain such a list, and enable him to submit some proposal to the House for the preservation, not only of these monuments, but others of a national and archaeological character. Some objection might be taken to such a course as interfering with the rights of private property, but he thought they might be easily got over. He was sorry to say a case had recently occurred where a work of great national and archaeological value had been destroyed in a manner, if the accounts were true, which showed an act of Vandalism one could hardly think it possible to be committed in these days.

We think that the best thanks of the Archaic Anthropologists of this country are due to both Mr. Layard and to the Society of Antiquaries; and we feel sure that they will do all they can to assist their scientific brethren, so admirably presided over by Lord Stanhope, in protecting the archaic remains of the British Isles.

WE regret that we are unable, this quarter, to give a continuation of the articles on "The Localisation of the Functions of the Brain, with special reference to the faculty of Language," or "The Report of the Proceedings of the Anthropological Society of Paris." Want of space, also, prevents us from giving a continuation of our summary of Carl Vogt's works on Microcephaly.

JOURNAL
OF THE
ANTHROPOLOGICAL SOCIETY OF LONDON.

SPECIAL GENERAL MEETING.

OCTOBER 28TH, 1868.

DR. HUNT, PRESIDENT, IN THE CHAIR.

The Director read the following Circular convening the Meeting.

ANTHROPOLOGICAL SOCIETY OF LONDON.

4, *St. Martin's Place, W.C., 17th October, 1868.*

SIR,—I am directed by the council to request your attendance at a Special General Meeting of the Fellows, to be held on *Wednesday, the 28th day of October, 1868*, at Eight o'clock in the Evening, at 4, *St. Martin's Place, Trafalgar Square* (in accordance with the Resolution* of the Special General Meeting of the 2nd September last), for the purpose of considering a Report prepared by Dr. DUNCAN, Mr. AVERY, Mr. BENDIR, Mr. LEWIS, and Mr. RAMSAY.

I am, Sir, your obedient servant,

EDWARD W. BRABROOK, *Director.*

* Resolution of Special General Meeting, 2nd September, 1868.—“That a Committee of five Fellows of the Anthropological Society of London, who are neither members of the Council nor friends of Mr. Hyde Clarke, be nominated, that shall report to a Special General Meeting of the Society upon the general and financial condition of the Society.”

The Chairman then called upon Dr. Duncan to read the Report as follows :—

*The Report of the Committee of Investigation into the general and financial condition of the Anthropological Society of London.**

ORIGIN OF THE COMMITTEE.

A resolution which was proposed at the Special General Meeting of the Anthropological Society, held on September 2nd, 1868, by Dr. P. Martin Duncan, F.R.S., and seconded by Mr. Brebner, F.A.S.L., was carried by a majority of twenty-two to thirteen votes. It was thus worded :—“That a Committee of five Fellows of the Anthropological Society, who are neither members of the Council, nor friends of Mr. Hyde Clarke, be nominated; and, that it shall report to a Special General Meeting upon the general and financial condition of the Society.”

* See explanatory note of Council at p. xviii.

NOMINATION OF THE COMMITTEE.

The impossibility of choosing such a Committee at the Meeting was evident, but Dr. Duncan asserted that a committee would be chosen, and a report made. Shortly after the day upon which the resolution was carried, Dr. Hunt, in his capacity of President, forwarded Dr. Duncan a list of the Fellows of the Society, and requested him to nominate a committee.

Dr. Duncan, as proposer of the resolution, elected to become a committee-man, and after some slight trouble, the undersigned consented to serve.

Proceedings.—At the first meeting of the committee, held September 16th, 1868, at the rooms of the Anthropological Society, it was clearly understood between the members constituting it, that they had the success of the Society at heart, that they would act independently and without bias, and that no evidence would be received except that of a documentary character. It was resolved that the committee had nothing to do with the quarrel between Mr. Hyde Clarke and the Council of the Society, except in a secondary sense, but that the details upon which the charges brought forward by Mr. Hyde Clarke rested would, of necessity, come before it and be reported on.

Dr. Duncan was chosen chairman.

The inquiries of the Committee may be arranged under the following heads.

1. The income, assets, expenditure, and liabilities of the Society.
2. The Review and Journal.
3. Other publications.
4. Arrears of subscriptions and resignations of Fellows.
5. Estimated income for 1869.
6. The accounts of the Society.
7. Amalgamation proceedings.

Conclusion, with recommendations.

The committee reports that the balance sheet submitted to the Annual Meeting of the Society, January, 1868, agrees with the entries in the books of the Society, and that a statement of the assets and liabilities made up to the 2nd September, 1868, and submitted to it, is correct.

That the following was the financial condition of the Society at the end of the year 1867.

Liabilities	£1430	2	8
Assets	1249	17	3

Balance against Society £ 180 5 5

The correct amount of cash at the bankers then amounted to £72 7s. 3d., and this was the only available asset. Consequently, the debt of the Society was £1357 15s. 5d.

Liabilities	£1430	2	8
Cash	72	7	3

£1357 15 5

It must be noticed that the Society is a "Publishing Society," and

that a considerable stock of books is in its possession. This stock, although not an available asset, may be fairly considered to be nearly so.

The assets not immediately available were :—

1. Value of stock at the Publisher's, taken at the lowest valuation, and not including copyright	-	-	£350	0	0
2. Subscriptions in arrear, estimated as good	-	-	470	0	0
3. Office sales of books	-	-	7	10	0
4. Value of Furniture, Museum, and Library, at the lowest valuation	-	-	350	0	0
					<hr/>
					£1177 10 0

The available assets - £ 72 7 3

The not immediately available assets 1177 10 0

Total assets, December 31, 1867. £1249 17 3

That on September 2nd, 1868, the financial condition of the Society was as follows :—

Liabilities	£ 825 11 4
Assets	1468 13 9

Balance in favour of the Society £643 2 5

The only immediately available asset was, cash at bankers £118 13s. 9d. Consequently, the debt of the Society was £706. 7s. 7d.

Liabilities	£825 11 4
Assets	118 13 9

£706 17 7

The assets not immediately available, were :—

1. Stock at Publisher's	-	-	-	-	£350	0	0
2. Arrears of Subscriptions (£1,300) probably good	-	-	-	-	650	0	0
3. Value of Furniture, Museum, and Library	-	-	-	-	350	0	0
					1350	0	0
					118	13	9
Available assets	-	-	-	-			

Total assets, September 2nd, 1868 £1468 13 9

That subscriptions to the amount of £888 : 6s. have been paid into the Society's hands from January 1st to September 2nd, 1868.

That after a careful examination of the items of expenditure during 1867, it considers due economy was practised.

That the publications of the Society have been well done, and that the price charged against the Society for them has been fair and reasonable.

That the total sum expended by the Society up to Christmas, 1867, was—

For the Review and Journal	-	-	-	£1365	8	6
For other Publications and Printing	-	-	-	1473	3	5

Grand Total £2838 11 11

That, at Christmas, 1867, the Society owed for :—

Publications	-	-	-	£262	14	2
For the Review and Journal	-	-	-	200	0	0

Total owing for Publishing £462 14 2

That on September 2nd, 1868, the Society owed :—

For Publications	-	-	£283	1	4
For the Review and Journal	-	-	387	10	0
Total owing			£670	11	4

That the cost of the Review and Journal in 1867 was, without postage, at the rate of £450.

According to a communication from Dr. Hunt, the charge for each copy of the Review and Journal is to be reduced to 2s. 3d.; consequently, the cost of the Review and Journal will be about £337 10s. a year, if it be supplied to the same number of Fellows as now receive the book. This sum is thus made up :—

Cost of Review	-	-	£227	10	0
Ditto of Journal	.	-	110	0	0
			£337	10	0

That no profits have as yet been handed over to the Society from the proprietor of the Review, and that this Committee is not aware of there having been any.

The President of the Society having written a letter to the *Athenæum*, informing the public that he is the Proprietor and Editor of the Review which circulates with the Journal as an independent publication, the Committee advises that the sense of the whole Society be taken whether the continuation of this arrangement is desirable.*

The Committee considers that the bargain between the proprietor of the Review and the Society has been straightforward and business-like, although it would have been better had there been no mystery on the subject of the Editorship and Proprietorship of the Review.

That it cannot discover that the Council has acted preferentially, as has been alleged, as regards the payment for the Review. The Review and Journal have been published together; they are serial publications; nevertheless, it cannot be sustained from the books of the Society the Committee has had before it, that there have been preferential payments.

That after a careful examination of the figures sent to the chairman by Mr. Hyde Clarke, in support of an allegation of preferential payments, the Committee reports that it cannot find any proofs of such preferential payments. That it considers the observations of Mr. Hyde Clarke concerning this allegation, to be offensive to good taste, and not to be warranted by facts.

The Committee reports that the Society has in the hands of the publisher, one volume of memoirs, which will cost from £150 to £200, and that there are no other publications in hand for which the Society has a liability.

That the arrangements made some time since with the *Reader* newspaper for advertisements, were justifiable;† but that those which referred to the supply of a copy of the *Reader* to the Fellows, were injudicious.

That the arrears of subscriptions are large in amount.

In 1866, Subscriptions were paid by 535 Fellows.

1867,	...	...	...	523	”
1868,	...	...	...	423	”

* See note of Council, p. xviii.

† Ibid., p. xviii.

The compounders are 46 in number.

The Fellows in Arrear for 1866	are	113
„	„	1867 „ 217
„	„	1868 „ 292
The amounts owing are, then,	£237	6 0
	455	14 0
	613	4 0

Total Arrears to September 10, 1868	£1306	4	0
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It must be remembered that one-quarter of the year 1868 is unexpired.

That, in all probability, one-half of the arrears will be paid up.

That 255 Fellows have resigned in five years (deaths included); and that 31 Fellows were elected whose addresses have never been discovered, and who have never paid anything.*

The Committee reports, that, considering the critical position of many important questions relating to the well-being of the Society, an income for 1869 can hardly be estimated ; it submits the following estimate.

Probable income for 1869.

Subscriptions	-	-	-	£1050	0	0
Arrears	-	-	-	250	0	0
Sale of Publications	-	-	-	70	0	0
				<u>£1370</u>	<u>0</u>	<u>0</u>

The Committee, after sending a written request for the production of the account books of the Society, has received every assistance it has required, especially from the Secretary.

That the annual balance sheets have not been made up upon an uniform principle ; the earlier ones apparently exhibiting the whole of the liabilities, and taking credit for the stock of books on hand, arrears of subscription, etc. ; the later ones, only showing the receipts and expenditure for the year.

It reports that the books, so far as it has examined them, are accurately kept and properly posted up (to December 31st, 1867), but it advises that the details of receipts and expenditure be more completely exhibited.

That no complete balance sheet of the assets and liabilities having been published by the Council for some years past, it recommends that such a statement shall be submitted to the Fellows at every Annual Meeting, and printed subsequently in the Journal.

That the neglect of this procedure has placed the Society in a false position.

That in the balance sheet passed by the auditors, January 11th, 1868, a balance from last year of £102 12s. is correctly placed under the head of income, but really, it is part of a loan which is not noticed to exist in any part of the balance sheet. Had there been additional published statements of the liabilities, this apparent discrepancy would have explained itself.

That, had such a statement of assets and liabilities been published, some passages in the report of the Council for 1867 would have been modified.

* See note of Council, p. xviii.

That it is the opinion of the Committee, that the report of the Council for 1867 did not give a sufficient explanation of the financial condition of the Society.*

The Committee is anxious to impress upon the Society, that, if all the Fellows in arrear would pay up their subscriptions, the debts could readily be liquidated; and, that it is the obvious duty of the Fellows to fulfil the undertakings they have entered into; for the council, anticipating such conduct, has incurred a serious debt for publications, of which the Fellows have already had the benefit.

It recommends that candidates for election as Fellows of the Society, be required to sign the following form of obligation:†—

“I, the undersigned, being desirous of becoming a Fellow of the Anthropological Society of London, do hereby promise, that I will duly and regularly pay my subscription to the Society as it becomes due, that I will observe all the regulations of the said Society, and that I will endeavour to advance the objects and interests of the said Society. Provided, that whenever I shall signify in writing to the Society that I am desirous of withdrawing my name therefrom, I shall (after the payment of any annual subscription which may be due by me at that period), be free from this obligation.

Witness my hand, this day of ——— ”

The Committee reports, that the following is a correct copy of the proceedings in council in reference to Dr. Hunt's and Mr. Brabrook's resignations, and it is content to leave the facts to tell their own story.

ANTHROPOLOGICAL SOCIETY OF LONDON.

Extract from the Minutes of Council, June 16th, 1868.

DR HUNT, PRESIDENT, IN THE CHAIR.

The President submitted a report on the action of the Committee appointed by the Council to confer with the Committee of the Ethnological Council respecting the proposed union of the two Societies; and he concluded, by laying before the Council the recommendation of the joint Committee, that the name of the new amalgamated Society be, “The Society for the Promotion of the Science of Man.”

The Rev. DUNBAR HEATH proposed, and Dr. SEEMANN seconded as an amendment:—

“That the existence of flourishing Societies under the name of Anthropological Societies in several of the capitals of Europe, is, in itself, a sufficient reason to prevent this Society acceding to a change of name.”

The above resolution having been put, there appeared fifteen votes in its favour, and four against.

Captain BEDFORD PIM moved, and Dr. KING seconded the following resolution, which was carried, one vote only being recorded against it:—

“That the name recommended by the Committee, ‘The Society for the Promotion of the Science of Man,’ is not a better name than ‘Anthropological’; and that the Council of this Society do not con-

* See note of Council, p. xix.

† Ibid., p. xix.

sider such a change desirable ; but they are quite willing to leave the selection of the name for the joint Society to the vote of a combined General Meeting of both Societies.

The Council then suspended its sitting.

On its resumption, Dr. HUNT announced that he had just submitted the above Resolutions to the Committee of the Ethnological Council, and they had been rejected by that Committee. Negotiations for a Union were consequently at an end, and he tendered his resignation of the Presidency of the Society.

Mr. BRABROOK also tendered his resignation of the office of Director.

Mr. PIKE proposed that the best thanks of the Council be given to the Committee for their efforts in endeavouring to carry out the proposed union of this Society with the Ethnological. (Carried unanimously.)

ANTHROPOLOGICAL SOCIETY OF LONDON.

Extract from Minutes of Council, June 19th, 1868.

DR. HUNT, PRESIDENT, IN THE CHAIR.

Resolved, that the Resignations of Dr. Hunt, as President, and Mr. Brabrook, as Director of the Society, be accepted.

Dr. J. BARNARD DAVIS, F.R.S., was then unanimously elected President.

Dr. DAVIS having taken the chair, the last two Resolutions were rescinded, and the following Resolution, proposed by Captain BEDFORD PIM, seconded by Mr. VAUX, was adopted, one vote only being recorded against it:—

“That the resignation of Dr. Hunt, as President of this Society, be not accepted, his services being of such importance to the Society, that they cannot be dispensed with.”

Proposed by Dr. CHARNOCK, seconded by Mr. Cox, and carried unanimously:—

“That the resignation of Mr. Brabrook, as Director of this Society, be not accepted, his services being of such importance to the Society, that they cannot be dispensed with.”

The Committee is of opinion that an amalgamation of the Ethnological and Anthropological Societies, would, in the interests of both Societies, and of science, still be desirable if it could be effected on equitable terms, and it recommends that any reasonable concession should be made.

It urges the publication of the Memoirs, and the continuance of the Journal of the Society, but it deprecates reflections upon the character and peculiarities of any of the learned Societies.

The Committee regrets the number of resignations, and considers that there must be some other cause for it than pecuniary disability.

It is impressed with the notion, that the objectionable expression of opinions upon sacred subjects which is occasionally found in some of the publications of the Society, has much to do with the secession of Fellows.

Believing that Anthropology can only flourish under the flag of

wisdom and peace, this Committee urges the adoption of such means as will prevent the appearance of paragraphs in the Society's publications which are uselessly offensive to the religious convictions of a greater or less number of the Fellows.

In presenting this Report, the Committee considers that it will give those, who are now engaged in a bitter quarrel, which is doing serious injury to the Society and the science it professes to study, an opportunity of admitting errors of statement, of retracting offensive expressions and accusations, and of joining in the attempt to establish the Society on a firmer basis.

That we, the undersigned, are unanimous in this our Report.

P. MARTIN DUNCAN, F.R.S., F.A.S.L.
J. GOULD AVERY, F.A.S.L.
A. BENDIR, F.A.S.L.
A. L. LEWIS, F.A.S.L.
A. RAMSAY, JUN., F.A.S.L.

The DIRECTOR said, that as representative of the Council he begged to move that the report be received and printed. He was certain that he but expressed the general feeling of the meeting when he said that the report was a most valuable document, and did the highest credit to the industry, ability, and good feeling of the gentlemen who had made it. The Society were greatly indebted to the Committee, who had entered carefully into matters of detail, had worked day and night to make themselves acquainted with all the facts, and had presented a completely exhaustive and satisfactory report.

The Rev. DUNBAR HEATH (Treasurer), expressed great satisfaction in seconding the motion. The Council had been uncertain up to that moment what their fate was to be, and after the anxiety which they had felt, it was a relief to be thus exonerated from the charges that had been brought against them. As Treasurer of the Society, he was happy to say that the report proved that in the statements of their accounts they had told no fibs. The recommendations of the Committee he had no doubt would be received by the Council in the spirit with which they were given. He had never made any observation intended to be offensive to the religious feelings of any member; and as to the *Review* question, the Council had no other object but the interests of the Society. It was an open question. It was satisfactory that parties totally independent and very desirous to know the real facts, had told them what the actual position of the Society is. He always had the idea that the state of the accounts was a simple matter, and it seemed from the report to be so. With regard to the question of amalgamation, the Council had been unanimous in its favour and had no objection to offer. They had offered to give up everything to effect it, and they could do no more. He hoped, that after what had occurred, they would go forward from that day with increased energy to carry out the objects for which the Anthropological Society was established. No scientific society was more desirous of doing good. Dr. Hunt, their President, was most

energetic in working for their success, and there was no reason why they should not double their numbers.

Mr. MACKENZIE expressed satisfaction at the report of the Committee. He said he had always thought the Council of the Society had done the right thing, and the report had proved that it was so. The correctness of their motives and of their manner of dealing with the finances had been settled by the report, and he wished to give his testimony to its exceeding value. Dr. Duncan had elicited much which had escaped the notice of others who had looked into the accounts. He considered, however, that the investigation was an irregular proceeding, and that strictly speaking, the report was a null and void document; and it was only on account of what it contained, as justifying the accounts of the Society, that they should receive it at all. It was simply because it was a good report in itself, which it was considered necessary to place before the Society. As to the question of amalgamation, he was totally against it. He thought the two Societies could not do better than take their own course. Their Society could never enter into fusion with the Ethnological under any circumstances. The report confirmed the opinion that this Society should work independently and without reliance on any other body. There was no Society in London so straightforward in their pursuit of truth and science. They had no dirty linen to wash. It had been all washed and ironed by the committee; all they had got to do was to wear it properly.

Mr. HYDE CLARKE said he had hoped there might have been some response to the concluding observations of the Committee. He should refrain from making any observations which the nature of the report suggested. The report established nearly everything he had said. One remark in the report as to the nature of the payments was unfair; there was no statement of assets and liabilities in the accounts presented at the Anniversary Meeting. At that Meeting the liabilities were stated generally to amount to £400. The total amount of the printer's bill at that time was £800, and it appeared to him that about £200 was due on account of the *Anthropological Review*. He had stated the circumstances under which he made the remarks at the anniversary meeting, and the origin of his statement was that what took place was the subject of controversy. When those remarks were published he had no other course than to appeal to the public press, and he could not regret the result which had been attained. His only object was to get at the true state of the affairs of the Society and to reduce the amount of the debt. That object had been effected since the last Anniversary Meeting. At that time the debt amounted to £1400, and was increasing, while the income was diminishing. The Council responded to his remarks by reducing the debt, and he trusted the result of what had occurred, instead of doing damage to the Society would place it on a more sure foundation. He had no desire to withdraw from the subject of the discussion, for the report of the Committee showed, that on the 31st December last the Society required reform.

Dr. KING gave his vote for the adoption of the report *in toto*.

He said he must express strongly his opinion that Mr. Hyde Clarke's proceeding in publishing the letter in the *Athenæum* was most unjustifiable, as was shown in the report. That report was a perfect contradiction of Mr. Clarke's statements. Mr. Clarke had done all he could to prevent the amalgamation of the two Societies; but he was wrong from the beginning to the end. He had said that the proposed plan of amalgamation went off on the question of finance. But he (Dr. King), said positively it was not so.

Mr. DENDY observed that the tenour of the report was unexpected. The investigation was undertaken adversely to the Council, but he was glad to find that the Committee had vindicated the conduct of the Council in every way. They had proved that the Council of the Anthropological Society had done right in incurring expenses in the anticipation of the good that would eventually be derived. He wished to take cognisance of that portion of the report which alluded to the atheistical tendency of the remarks of some of the members. He thought that a wrong view had been taken by the Committee of the occasional remarks during the discussions. In considering the correlation of Scripture with science, he thought they ought not to take under review those parts which were of divine origin, such as the prophecies, etc., but they might take the historical parts and comment on them. He believed that the public thought that because little discrepancies appeared between some received religious opinions and the opinions occasionally expressed in that Society, that they had an atheistical tendency. In his opinion, religious men should enquire more, and scientific men believe more. They should induce men to neutralise their opinions; and though the union might produce a little effervescence at first, it would accomplish much good in the end. He regretted that the amalgamation of the two Societies had not taken place, especially as it came so near as to be a mere question of name. The proposed name of "Society for the promotion of the Science of Man," was objectionable, for it was very difficult to put such a title on paper. He trusted that, by and bye, both Societies would agree to amalgamate, and that they would retain the word "Anthropological."

Mr. BROOKES begged Dr. King not to make this matter a personal question again. He had not intended to do more than to deprecate the exhibition of the strong personal feud between Dr. King and Mr. Clarke which ought not to be. He thought that the report did substantiate the charges brought against the Council. There might have been some incongruities and some degree of intemperance in the manner in which the charges were preferred; but substantially, they were to the effect that an investigation of the affairs of the Society was required, and they led to that report, the concluding recommendations of which were judicious and were calculated to restore peace. There was no statement of assets and liabilities shown to the auditors at the General Meeting; for the auditors were told that they had nothing to do but to examine the receipts and payments of the last year. Mr. Bendir asks why the statement was not demanded? It was demanded; and he would ask in return, why was it kept back?

A statement of assets was, indeed, subsequently shown to them, but not officially, and it was incomplete and imperfect. With regard to the proposed amalgamation, he thought a great mistake had been made which prevented it from taking place. When the delegates were appointed by the Council to negotiate the matter, it was understood that the name of the Society would be a question, perhaps the great question in dispute, and that a neutral name would be accepted. The delegates went to carry out the arrangement on that basis. And the Council were pledged to support the delegates, and there should not have been any further reference to them on the point.

The PRESIDENT explained that the Council changed the basis of negotiation, and it was arranged that the name should be retained if no better name could be found ; and Professor Huxley, who had said that no better name was possible, had afterwards said, that if they did not accept some other name the amalgamation must come to an end.

Mr. BROOKES, in continuation, said the delegates were instructed to adopt any name they thought proper. There was no reservation, therefore there should not have been any subsequent reference to the Council. The resignations of the President and Director showed the nature of the pledge given to Professor Huxley, to the effect, that if not supported by the Council they would resign.

The PRESIDENT stated that they resigned, because they had told Professor Huxley that if the Council did not accept the name proposed, they would resign.

Mr. BROOKES thought that the President's explanation was not different from his assertion. If the matter were as he stated, then the delegates ought not to have submitted the question to the Council again.

Mr. PIKE observed, that every-one seemed to accept the report of the Committee in the same sense ; no sophistry and no verbiage could convert that report into anything but a complete vindication of the Council, and a wholesome rebuke to the two persons (and there were only two) who had attacked it. There were certain points in the report on which remark might be made, one of which was the alleged atheism of the Society.

Dr. DUNCAN (Chairman of Committee), rose to explain. He said, the words of the report were : "It is impressed with the notion, that the objectionable expression of opinions upon sacred subjects which is occasionally found in some of the publications of the Society, has much to do with the secession of Fellows. Believing that Anthropology can only flourish under the flag of wisdom and peace, this Committee urges the adoption of such means as will prevent the appearance of paragraphs in the Society's publications which are uselessly offensive to the religious convictions of a greater or less number of the Fellows."

Mr. PIKE agreed with the report in that recommendation ; and the adoption of it would give power to the Council to expunge from their reports expressions that might be offensive. As to the question of amalgamation, he had at one time thought, that in the interests of

science an amalgamation should be made on any terms; but upon further consideration he was not certain that if any little feeling of rivalry existed between any two Societies, such a spirit might not stimulate the members of each body to increased exertion, and prove in the end beneficial to science. The Societies, if amalgamated, would incur less expense; but, it seemed hardly within the province of their Society at present, to make any application to the Ethnological Society for union.

Mr. VAUX considered it to be beneath their Society to go into the question of amalgamation, and that they ought to maintain their own position. There was no necessity to quarrel among themselves or with others; they had their own work to do, and if they did it well they need not mind what others might say.

Mr. BENDIR (Member of the Committee), felt obliged, not as a Committeeman, but as a Fellow of the Society, to protest most emphatically against Mr. Clarke's perversion of the meaning of the report. He had examined Mr. Clarke's figures, but could not find them correct in any one instance; the figures of the report proved numerous and important errors by Mr. Clarke, for which he ought not to hesitate any longer to apologise in a sincere and gentlemanly way. If Mr. Clarke did not do so, the Fellows would excuse him if he reluctantly followed Mr. Clarke in the discussion of a few personalities, which he was sorry to introduce, although they were pertinent to the subject. But he paused, to wait for the apology he still desired to listen to. Well, he hardly expected Mr. Clarke would apologise; the fact was, he was only doing to this Society what he had been and was now doing in others; the report of a meeting of a Railway or Financial Company appearing in the daily papers of the 30th September, had increased the world's knowledge of Mr. Clarke, "who was listened to with much impatience," etc., etc., and afterwards led to a squabble in a police court. The Ethnological, Horticultural, and Statistical Societies, were also benefited by Mr. Clarke's activity and energy: the latter he was, as he called it, "now reorganising." Add to this, Mr. Clarke's frequent contributions to the weekly paper which had opened its pages to him; and there was a nice catalogue of his labours for the present. As to the past, a gentleman, whose name need not transpire, but would carry some weight if it did, had graphically described Mr. Clarke's conduct; and accounted for his retiring from the service of a great and glorious, but inappreciative country. The character of Mr. Clarke was summed up in four brief words: "always in hot water." If gentlemen did not feel as interested in the biography of the individual as in the history of the race, they were not yet practical Anthropologists; but he would gladly change the venue to suit their taste. If gentlemen present, take into their consideration the antecedents of the man as far as they were on record, they would, perhaps, be able to judge of his motives, which no longer could be mistaken by anybody. Mr. Clarke was on the Council of a rival society, and he could only congratulate the cause of science on the acquisition. He, for his part, called upon Mr. Clarke after the report

was in print to look into it carefully ; another opportunity would then be afforded him of either withdrawing or substantiating the charges he inconsistently published ; he said inconsistently, as Mr. Clarke by joining this Society had pledged himself to its rules, which prescribed a remedy very different to that which Mr. Clarke had attempted to apply.

Dr. DUNCAN (Chairman of the Committee), thanked the meeting for the reception they had given to the result of their labours, which he hoped would prove beneficial to the Society, and that in a few days certain acerbities of expression which had occurred would be softened and apologies made. He thought that Mr. Clarke was wrong in the assertion that the Council had indulged in preferential payments, and that in making that charge he had got hold of wrong figures in the accounts. It should be borne in mind that the *Anthropological Review* and *Journal* together, constituted a serial publication, and that they must be paid for at certain periods. With respect to other matters, he thought that Mr. Dendy had mistaken the tenour of the last sentences of the report, which were not to the effect he seemed to conceive. As to Mr. Brookes, he was glad that he praised the Committee, and with regard to his audit of the accounts it was correct so far as it went, but he should have insisted on having a statement of the liabilities of the Society, which was drawn out ready to be produced. He advised the Council in future to have a balance sheet, which would contain a statement of assets and liabilities, placed before the auditors, and then there would be no difficulty in understanding the position of the Society's affairs. There could be no doubt that in past years they had struggled through great difficulty, and that on more than one occasion the Treasurer had sometimes put his hand into his own pocket to meet urgent demands. With regard to the amalgamation scheme, it had received the support of some who were anxious for both Societies to flourish. If it could be properly effected, the amalgamation would be greatly to the benefit of the Society. The Anthropological Society comprised within its objects much more than the Ethnological Society had in view. As to the past, it was probable, that after the explanations which had been made, the members in arrear would pay up their subscriptions ; and if all that had occurred went forth to the world, it was to be hoped that the difficulty which had arisen would be only temporary. The positions of the Society now and in December last, were very different, and now there was a good look out. He hoped, after what had taken place, that the Council would forgive, forget, and forbear, and that they and Mr. Clarke would again come together.

The DIRECTOR said he felt the same desire for peace, but at the same time the Council could not accept peace at any price. It was a case in which the Council had felt it to be their duty to bring a grave charge against a member of the Society in nearly the same terms as Dr. Duncan had expressed that night. When the subject was brought before the General Meeting, he (the Director), told them that the statements made by Mr. Clarke were not true ; that there had been no preferential payments nor anything like jobbing on the

part of the Council, yet that person did not wait to inquire, but said that the payments made showed jobbing. He (the Director) knew, when the committee of investigation was appointed, what the result would be, and the facts were as much within Mr. Clarke's reach as his. Every statement Mr. Clarke made was incorrect.

Mr. BROOKES here remarked that Mr. Clarke did not know at the time that the President was the proprietor of the *Review*.

The DIRECTOR, in continuation, and without noticing the interruption, asked whether the Council were not to have any apology for such conduct. Since the Anniversary Meeting the Society had been kept in a ferment by assertions which were contrary to fact; and he should feel it to be his duty to resist such proceedings to the utmost. Mr. Clarke sent his letter to the Council on the 10th of August and it appeared in print on the 15th, before there was time for a reply. Mr. Clarke now insinuated that his interference had been advantageous to the Society; but he (the Director), said most decidedly that it had produced evil to the Society. Two years ago arrangements were made for a reduction of the expenditure; and a reduction equal to 33 per cent. had been made long before Mr. Clarke interfered in their proceedings. The financial position of the Society was in consequence much improved, and they were now in a position fully equal to that of any Scientific Society in London at a corresponding period of its history. The report of the Committee was fair, honourable, and straightforward; but the epithet "judicious," by which it had been designated by Mr. Brookes, did not apply to it. The report was the result of the unbiassed labour of the Members of the Committee. They would not have his assistance, but they had pursued the inquiry perfectly unbiassed.

Mr. J. GOULD AVERY (Member of the Committee), made some remarks on what had been said by Mr. Clarke and by Mr. Brookes. Mr. Clarke had said that the substance of the report justified his accusation against the Council as to the state of the Society. But the fact was that the result of the inquiry had been to damage Mr. Hyde Clarke. Mr. Brookes said that it had shown that there was something amiss; but the general impression of the Committee was that almost every one of Mr. Clarke's allegations was contrary to fact, for he had failed to produce a semblance of evidence in their favour. The Committee investigated all these matters, and the result was very damaging to him. Their verdict was, not only "not proven," but "not guilty" on every point; and in bringing in that verdict, they said that it was due from Mr. Clarke to the President and to the Council to make an apology. He considered that Mr. Clarke could not stand right with the Society or with the public until that had been done, and the apology ought to be as public as the accusation had been.

Mr. A. L. LEWIS (Member of the Committee), expressed his entire approval of every word Mr. Avery had uttered, and he hoped that Mr. Clarke would accept his advice.

Mr. HYDE CLARKE said he had no wish to impugn the conduct of the Committee, and he felt surprised, that after having made that

report any Member of the Committee should impugn him. What must be the character of that Committee, he asked, one of whom could come there and say, that he (Mr. Clarke), had been for many years concerned in disturbing scientific societies and financial bodies? The Statistical Society was said to be one of them. He would not, however, waste the time of the Meeting with idle matters of that kind; he regretted that Members of the Committee should show their personal feelings by making such remarks. He conceived that the person to receive an apology was himself, and not the Council. When the Report came before the public, it would then be seen who were the parties to make an apology, and he knew the result of the publication of that report would be to show that there had been errors in the past of the nature he had pointed out. Nothing had occurred to shake his conviction that he was right. He would refrain from commenting on the report; he would only say, that if the advice it gave had been adopted there would have been no personalities, and the Society might have enjoyed the benefit of it; but one controversy raised the ground for another, and he should consider what course he should take.

Mr. BENDIR said that all the evidence offered by Mr. Clarke was laid before the Committee, but they resolved not to be dictated to by him.

The PRESIDENT said he was much pained by the remarks just made by Mr. Clarke, who he hoped would have apologised; but instead of doing so, asserted the investigations had not been properly conducted. After such remarks he would say nothing more about Mr. Clarke, but his statements at that meeting would serve to show the difficulty the Council had in dealing with him, and why it was thought desirable that he should be expelled from the Society. He (the President) believed that there were few scientific societies with which, after six years of struggling with difficulties, more faults might not have been found, and he was thoroughly content with the report of the Committee. As to the alleged mystery regarding the *Review* and *Journal*, he had stated that he was the editor; and as to the apparent mystery about it, it was adopted as a matter of self-defence, for if he had made it known that he was the editor, it would be doubtful whether he would have been there that evening. The copyright of the *Review* had been offered to the Council again and again, and there was no mystery as to that. If it were thought incompatible with the office of the President of the Society that he should be the editor of the *Review*, he should be ready to resign either one or the other, or both. As to the question of amalgamation, he would say nothing. He consented to accept another name; but he now heard his friends say that the name proposed was ridiculous. All that could be said for it was, that it was not so ridiculous as any of those proposed by Professor Huxley. As to the alleged offensive remarks on sacred subjects, he hoped the Council would attend to the recommendation of the Report; but the members who contributed the papers, rather than the Council, were attacked by those remarks. As to the recommendation respecting attacks on other societies, he said that this So-

ciety had abstained from any until after the meeting of the British Association at Bath, when the Anthropological Society was attacked, and it was thought desirable to reply to those attacks. The President mentioned that Professor Huxley had announced that ladies would not in future be admitted to the meetings of the Ethnological Society, and they would thus be deprived of any cause for comment on this head. He concluded by putting to the meeting the motion, that the report of the Council be received, and printed in the Society's official journal.

The motion, "That the Report of the Committee be received, and printed," was then put to the vote, and was carried with one dissentient (Mr. Hyde Clarke).

Mr. DIBLEY proposed a resolution to the following effect,—

"That this meeting has great pleasure in declaring its fullest confidence in Dr. Hunt, President, and the Council of the Society; and takes this opportunity of expressing their regret at the unwarrantable statements made by Mr. Hyde Clarke, and their hope that he will publicly retract the same, at the earliest opportunity, or at once retire from the Society."

Mr. WALFORD said he felt satisfied that the report was an independent one, and that he had never listened to a report so convincing and gentlemanly; therefore, the members of that Committee well deserved the thanks of the meeting. After having read the statements of Mr. Clarke, he must say that a more damning refutation of such charges was never made in so mild and proper a manner. If there had been anything objectionable in the *Review*, the proper channel for a reply would have been the *Review* in which it appeared, and departure from that channel was evidence of the vilest intention. He still, however, hoped that they would hear from Mr. Clarke, and from the other gentleman who had attempted to bolster up his statements, a retraction and apology. Never yet did English gentlemen hesitate to apologise where they had made wrongful accusations; and he hoped that apologies would be made by them, that night, for the vile and scandalous attempts to defame the President and officers of that Society. If they refused to do so, they would, in the public mind, be expelled after these proceedings. He concluded by moving, "That the best thanks of the Society be given to the Committee for their investigations and report, and that any expenses they might have incurred by the inquiry should be repaid."

Mr. DIBLEY's motion, which was being written out while Mr. Walford was speaking, took precedence of this resolution, and, having been seconded, was put to the meeting.

Dr. DONOVAN declared that Mr. Hyde Clarke had met with the fate of every reformer. He had been cried down, degraded, and vilified; but he would ultimately triumph. He dissented from any vote of thanks to Dr. Hunt, whom he considered the great enemy of the Society, as the promulgator of atheistical opinions in the *Anthropological Review* and *Journal*, which were supposed to be the organs of the Anthropological Society. In the management of the Society, he had got men of similar opinions to his own on the Council; and it was no

wonder that independent members had been driven away by scores. Men having such opinions were, he said, disqualified from holding the management of any English society, and he "stigmatised the whole lot of them." He concluded by moving an amendment, to the effect "that the Society viewed with regret and disapprobation the fact that a great majority of the Council are professed atheists."

The amendment was not seconded.

Mr. ANDERSON ROSE agreed with the report of the Committee, and expressed his thanks to them for every word of it; but he saw in the report no ground for the personal attack which had been made on Mr. Clarke. The result of the charges alleged against the President and Council by that gentleman, had been the production of a report which would put the Society right with the public; and he thought Mr. Clarke had been punished enough by the opprobrious terms that had been heaped upon him.

When Mr. Dibley's motion was about to be put to the vote, Dr. Donovan insisted on his amendment being put first, and for some time he persisted that it should be done, though told that it would be irregular to put an amendment, which had not been seconded, to the vote.

Mr. BROOKES expressed himself astonished at the turn matters had taken. It might be well, he said, to talk about gentlemanly feeling; but what, he asked, had been the feeling exhibited that night? After reading the report of the Committee, recommending peace and amity, one member of the Committee after another rose to make violent and vituperative attacks on Mr. Clarke because he would not apologise. It was unreasonable to call on Mr. Clarke to make an apology on the mere reading of that report. It required to be read over and considered. So far as he understood it, it appeared to substantiate the charges made by Mr. Clarke. There were no means by which he could get accurate figures; therefore, mere inaccuracy should not be made a serious charge against him. When the report was printed, they would be able to compare it with the statements in the *Athenæum*, and he should be one of the first to call on Mr. Clarke to apologise, if the report did not agree with his statements.

Mr. VAUX suggested an alteration in the resolution, to the effect "that the meeting feel pleasure in expressing their confidence in Dr. Hunt, and regret that Mr. Clarke should have published his statements, for which it is hoped he will take the earliest opportunity to apologise."

Mr. HYDE CLARKE asked what he had to apologise for. There were a great many parts of the report which confirmed his statement. The only part which contradicted him was that respecting the alleged preferential payments, and they had heard nothing from the Chairman of the Committee which showed that he was wrong on that point. If he found he were in the wrong in regard to that or any other matter, he would be ready to apologise.

The resolution, altered by the omission of the words "or at once retire from the Society," was then put to the vote, and carried with one dissentient (Dr. Donovan):—

"That this meeting has great pleasure in declaring its fullest confidence in Dr. Hunt, President, and the Council of the Society; and takes this opportunity of expressing their regret at the unwarrantable statements made by Mr. Hyde Clarke, and their hope that he will publicly retract the same at the earliest opportunity."

The PRESIDENT returned thanks. He said that since the attack commenced he, as a representative of the Society, had received such a number of letters from all quarters as to inspire him with far greater enthusiasm as to the present state of the Society and their future prospects. In that respect he thought the attack had done good service. He expressed the hope that he should soon be able to retire from the honourable office he held as their President, and take an independent position in the Council.

Mr. Walford's resolution of thanks to the Committee was then proposed, and passed unanimously.

Dr. DUNCAN, on behalf of the Committee and for himself, returned thanks. He said he trusted that Mr. Clarke would withdraw his expressions towards the Committee; and that when he had examined the figures and compared them with his statement, he would do what was right, and apologise. He thought the Council should consider *seriatim* the recommendations suggested by the Committee.

The PRESIDENT assured Dr. Duncan that not only would the recommendations of the Committee be discussed, but they would most probably be adopted. As to the recommendation of amity and goodwill, he said he had been a fighting Fellow of the Society for the last six years, but he should have much pleasure if this dispute came to an end; and if Mr. Clarke and Mr. Brookes came forward to apologise for the injury they had tried to do to the Society, he should be most ready to let bygones be bygones.

The meeting then separated.

[APPENDIX.

I. EXPLANATORY NOTES.

P. i, line 20.

The Council find it necessary to append some explanatory notes to the Report of the Committee. The necessity probably would not have arisen if the Committee had thought it consistent with their duty to avail themselves of the offer of the Director and several Members of the Council to attend and give verbal explanations.

P. iv, line 22.

The Council anticipated this suggestion of the Committee by ordering at their Meeting on October 7th, 1868, that the opinion of Fellows should be taken on this subject.

P. iv, line 5 from bottom.

The arrangement alluded to, was an experiment which lasted seven weeks, from the 17th April to the 7th June, 1866.

P. v, line 14.

The statement of the Committee is incorrectly worded. The Council are informed that its real meaning is, that the election of

twenty Fellows has been cancelled at their own request, the proposer not having had their authority to nominate them; and that the present addresses of eleven Members, who have paid no subscriptions, are not entered in the office books; though, of course, the addresses of all were known at the time of election.

P. vi, line 3.

The recommendation that a printed statement of assets and liabilities should be made every year, is one that the Council feel great difficulty in assenting to. As the assets of the Society consist mainly of two items, the value of which is conjectural, viz. :—Unsold books in the hands of the publishers, and arrears due from Members, the Council feel great hesitation in accepting the responsibility of placing an estimated value upon them; and to insert them in the accounts at their gross value, would be certain to mislead. The Council are advised, moreover, that the publication of such a statement would not be in accordance with the general custom of publishing societies. The Committee remark that, had a statement of assets and liabilities been published, some passages in the Report of Council for 1867, would have been modified. The Council have not been able to discover the passages alluded to. As delegates and representatives of the whole body of Fellows, they have always desired to communicate their views quite unreservedly to their constituents, and they are not aware that they failed in doing so on that occasion. The Committee do not appear to have had before them the proposition submitted to the Council some time ago, viz., that the property of the Society in unsold books should be transferred to a body of Fellows, each of whom should contribute £50 to a fund for paying off the debt to the printer. Some names have been already handed into the Council as willing to enter into this arrangement, and the Council would have been glad to have had the support of the Committee to this proposition.

P. vi, line 11.

This is ordered by the Regulations (form No. 2). The Council on the 5th November, 1867, resolved that a letter of similar nature should be prepared and signed by each Fellow. Such printed forms are in the office, and have been sent out. It is to be regretted that they are very rarely returned by the Fellows.

II. REPORT OF A SPECIAL COMMITTEE APPOINTED ON NOVEMBER 3RD, 1868, TO INQUIRE INTO THE DESIRABILITY OF ACCEPTING THE COPYRIGHT OF THE ANTHROPOLOGICAL REVIEW, AND TO REPORT ON THE WORKING OF THE PRESENT PLAN OF PUBLISHING THE JOURNAL OF THE SOCIETY.

GENTLEMEN,—Your sub-Committee have had before them a number of documents with reference to the conduct and cost of the *Anthropological Review* and *Journal of the Anthropological Society of London*, and, among these, especially, the statements of Messrs. Richards and Trübner, the one as to the cost of printing, the other, as to the sales which have been effected.

They have found :—

1. That the cost of the first 19 Numbers of the *Review* and *Journal* amounted to £2866 15s. 11d. ; of which, the Editor will receive back £2326 17s. 1d ; losing by the transaction £539 18s. 10d., or, on an average, about £28 8s. per quarter.

2. Your sub-Committee find, that the above statement of the costs of publication, etc., which they have computed from the reports of the printer and publisher, is fully confirmed by the estimates forwarded to them by the Editor of the *Anthropological Review*. Thus, Dr. Hunt has put the very lowest cost of everything at £325 per annum. In this estimate he has allowed nothing for the cost of possible or probable translations, for the remuneration of an editor or sub-editor, or for the many incidental expenses unavoidable in the efficient carrying out of a Scientific Journal. We consider, therefore, the second estimate he has sent, to be, in all probability, much nearer the mark. According to this, the whole cost per annum is about £425, or £100 more than the first estimate. To this sum, we think we cannot add less than £75 for editorial expenses—a very moderate amount, it should be remarked, when we bear in mind the class of editor required for such a *Review*. It will be seen that, on this view, we cannot assume that the entire cost will be much less than £500. Of this sum, however, we may reasonably expect to recover from £75 to £120—by sales on the part of the publishers,—in other words, not less than £400 per annum must be set aside as the usual annual cost of the *Review* and *Journal*.

3. Your sub-Committee can see no ground for supposing that, were the Society to accept the copyright of the *Anthropological Review*, they would be able of themselves to publish it at a rate less than that at which it is at present conducted. As compared with the Quarterly Journals of other Societies, and looking at the amount of matter it contains, it must be pronounced to be a cheap publication to any one ; and, especially so to members of the Society. Add to this, that if the Society were to determine on taking it on their own shoulders, they could not do so without first securing a special Editor, whose salary must be adequate to the very varied knowledge he must possess.

4. Your sub-Committee further feel strongly that it is inadvisable, to say the least, as a question of policy, that the Society by accepting the ownership of the *Anthropological Review* should, thereby, become responsible, as they assuredly would become, for every phrase or argument which may hereafter occur in any of its pages ; the only results of which would be, that the Council would be constantly involved in unpleasant and profitless discussions. Nor do they believe that such a step would be a wise one as regards the *Review* itself. The very essence of such a publication—as it seems to them—consists in the fact, that it is as free as possible from control on all matters of legitimate scientific inquiry ; and they believe that its energies are liable to be grievously cramped and checked if once bound down by the tight ropes of a Council and of a Special Editor. At the same time, as remarks have from time to time been made

as to the matter occasionally admitted into the *Review*, and on the tone in which certain subjects have been handled, your sub-Committee would recommend, that all future numbers of the *Review* shall contain on their commencing fly-leaves or wrappers, a notice such as is always attached to the "*Archæologia*," to the effect, that the Society is not to be held responsible for the individual opinions set forth in the following papers.

5. On these and other grounds, which it is needless to urge here, your sub-Committee are clearly of opinion that, while offering the heartiest thanks to Dr. Hunt and the publishers of the *Anthropological Review* for the readiness with which they have supplied them with all needful information, the Society would be in no sense a gainer by accepting either the copyright or the conduct of the *Review*, and that it is unquestionably the wisest policy for the Society to leave the arrangements between it and the *Anthropological Review* exactly in the same position they occupy at present.

W. S. W. VAUX, M.A., F.R.S., Chairman.

H. BEIGEL, M.D., M.R.C.P.Lond., Chairman of
Finance and Publication Committee.

L. OWEN PIKE, M.A., F.A.S.L.

17th November, 1868.]

SESSION 1868-69.

FIRST ORDINARY MEETING, NOVEMBER 3RD, 1868.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

The following new members were elected :—

Fellows.—Thomas Inman, Esq., M.D., Liverpool; Arthur Dyott Thomson, Esq., M.A., Belvedere, Tunbridge Wells; William Ralph Benson, Esq., Allahabad, North West Provinces, India; John Heaton Esq., Eastwood, Notts; William Arbuthnot, Esq., Oriental Club and Hardwick Hall; Daniel de Castro, Esq., Mitre Court, Temple; Thomas H. Morgan, Esq., Oakhurst, Ore, near Hastings; Lawson Tait, Esq., M.R.C.S., Wakefield; W. H. Harrison, Esq., Herne Hill; L. E. Sewall, Esq., M.D., Boston, U.S.; J. McCormack, Esq., Congo River, W. Africa; H. J. Hulcee, Esq., M.D., Louisville, U.S.; J. B. Sparhawk, Esq., Fernando Po; Joseph Kaines, Esq., 13, Finsbury Place South; S. J. Smithers, Esq., 1, College Street, St. Albans; Arthur Turrel, Esq., New York; Felix Garden, Esq., Penzance; Chas. Napoleon De Gardi, Esq., Brass River, West Africa; James Strathern, Esq., Old Calabar River, and Glasgow; Karl V. Nordman, Esq., C.E., Calicut, Madras; Basil Lavery, Esq., Madras; Capt. C. E. Russell, 2nd W.I.R., Accra, Cape Coast, West Africa; A. A. Stewart, Esq., M.D., Staff Surgeon, Cape Coast Castle.

Corresponding Members.—Benjamin Robert Winthrop, Esq., New York; Dr. C. B. G. Miraglia, Aversa, near Naples, Italy; Robert S. Newton, Esq., New York.

Local Secretaries.—Dr. Diezmann, San Juan del Norte, Nicaragua;

Dr. J. H. Huleee, Louisville, U. S. America ; John McCormack, Esq., Congo River, W. Africa.

The following presents received since the last session were announced :—

From the SOCIETY.—Proceedings of the Royal Society, Vol. xvi, Nos. 102, 103, 104.

From the EDITOR.—The Medical Press and Circular.

From the AUTHOR.—Sopra il cranio ed encefalo di un idiota ; memoria di Paolo Gaddi.

From J. CUTHBERT, Esq.—Kosmos, 2 vols., A. Von Humboldt.

From DR. HUNT.—Fisica del Globo : Gerolamo Borcardo.

From the AUTHOR.—Observations on Crania : Dr. Jeffries Wyman.

From the ACADEMY.—The American Naturalist, July.

From the EDITOR.—The Farmers' Journal, May, June, July, August.

From the AUTHOR.—Geology of Northumberland and Durham : Geo. Tate.

From the SOCIETY.—Proceedings of the Cotteswold Naturalist's Field Club, 1867.

From C. C. BLAKE, Esq.—Instincts of Races : Dr. J. C. Nott. Quelques Remarques sur les monuments du Perou : E. G. Squier. Baker's African Explorations : Dr. J. C. Nott. Art of Travel : F. Galton. Synopsis Mammalium, Fischer. Manual of Zoology : M. Edwards.

From the SOCIETY.—Bulletins de la Société d'Anthropologie de Paris Jan. à Fev., Fev. à Avr., 1868.

From the AUTHOR.—The Myths of the New World, Daniel G. Brinton.

From the AUTHOR.—Sull' Antropologia della Grecia, A. Garbiglietti.

From the AUTHOR.—Two Pamphlets on an extraordinary Will Case. Address on Peculiarities of Professional Usage. Address on the Injurious Tendency of Corporate Misrule : Dr. T. R. Tatham.

From the AUTHORS.—Reliquiæ Aquitanicæ : Lartet and Christy.

From the AUTHOR.—Grammatik der Sonorischen Sprachen : J. Karl E. Buschmann.

From the AUTHOR.—Antichità dell' Uomo dell' Italia Centrale : G. Nicolucci.

From the SOCIETY.—Transactions of the Royal Society of Victoria, part i, vol. ix.

From the AUTHOR.—Estudios Prehistoricos : F. M. Tubino.

From the MANX SOCIETY.—Antiquitates Manniæ : Rev. J. G. Cumming.

From the AUTHOR.—Tribes on the Neilgherries : Dr. John Shortt.

From the AUTHOR.—Prolusione dei Lavori della Società Frenopatica Italiana : Mar. and July, 1862. R. Manicomio di Aversa : Ricerche Statistiche per l'Anno 1867. Programma di Un Manicomio : Modello Italiano. Della Costruzione di un Manicomio Muliebre. Trattato de Frenologia, vol. i and ii, with Atlas : B. G. Miraglia.

From W. S. WINDHAM, Esq.—The Pedigree of the English People : T. Nicholas.

From the AUTHOR.—Anales del Museo Publico de Buenos Aires, part v : Professor Burmeister.

From the ACADEMY.—Verslagen en Mededeelingen der Koninklijke

- Akademie van Wetenschappen, 1868. Jaarboek, ditto, 1867.
Processen-Verbaal, ditto, May 1867, April 1868.
From the AUTHOR.—Temperature of the Sea: N. Whitley.
From the SOCIETY.—Proceedings of the Royal Geographical Society, vol. xii, Nos. 2, 3, 4, Oct. 1868. Journal of the Royal Geographical Society, 1867.
From the INSTITUTE.—Journal United Service Institute, May, August, 1868.
From T. S. BARRETT, Esq.—The Ingoldsby Letters.
From the SOCIETY.—Proceedings of the Royal Society of Antiquaries, vols. iii, iv, No. 2.
From the SOCIETY.—Bulletins de la Société Impériale des Naturalistes de Moscou.
From the SOCIETY.—Bulletins de l'Académie Impériale des Sciences de St. Petersburg.
From the INSTITUTE.—Journal of the Royal Institution of Cornwall, No. ix.
From the AUTHOR.—Vorarbeiten zu einer Cryptogamenflora iv. Laubmosse, 1 serie. Die Trichinose in Brünn: Dr. J. Kalmus.
From A. W. FRANKS, Esq.—Guide to the Christy Collection.
From the AUTHOR.—On Foreign Missions: G. Harris.
From the SOCIETY.—Journal of the Asiatic Society of Bengal and India, Pt. I, No. 3, 1867.
From the AUTHOR.—Narrative of Captivity in Abyssinia: Dr. Henry Blanc, F.A.S.L.
From the AUTHOR.—Atavisme: E. Dally.
From the SOCIETY.—Fortieth Anniversary Address of Gesellschaft für Erdkunde in Berlin, 1868.
From the SOCIETY.—Leeds Phil. and Lit. Trans. Report, 1867-8.
From the AUTHOR.—Das bestandige in den Menschenrassen: Dr. Bastian.
From the ACADEMY.—Novorum Actorum Academiæ Cæsaræ Leopoldino Carolinæ.
From the AUTHOR.—American Eclectic Medical Register, Transactions of the Eclectic Medical Society: Dr. R. S. Newton.
From the AUTHOR.—Various Papers: C. O. Groom Napier.
The PRESIDENT, after proposing the thanks of the Society to the Donors, congratulated the Meeting on the return of Dr. H. Blanc from Abyssinia, and on the return of their Honorary Fellow, Dr. Carter Blake, from Central America.

The following reports were read:—

Report upon the state of Anthropology at the Meeting of the British Association for the Advancement of Science at Norwich. By SIR G. DUNCAN GIBB, Bart., M.A., M.D., LL.D., F.A.S.L., etc.

At the late meeting of the British Association at Norwich, the science of Anthropology was almost wholly unrepresented; and this was due not to the falling off in the general interest of the science, but to two causes that presented themselves, one depending upon the

other. The chief of these was the annual meeting of the Congress of Archaic Anthropology, the name of which was there changed to that of Prehistoric Archæology. Mainly in consequence of this meeting occurring at the same time and place as that of the British Association, no Anthropological department was nominated in Section D, and papers that would have been brought before the latter, were read before the Congress. Those, also, who had papers bearing on some of the divisions of Anthropology, did not desire to interrupt the harmony and well working of the Congress by any endeavour to read them before a department of Section D. The Congress, therefore, represented all that was interesting concerning the Science of Man. It must be stated, however, that a large number of valuable papers, intended for the British Association, were not submitted to the Congress, their authors reserving them for reading elsewhere.

Before the British Association the following papers were read, bearing more or less upon Anthropology:—

“On the Native Races of Abyssinia.” By Dr. H. Blanc.

“Fourth Report of Committee for the Exploration of Kent’s Cavern.” By Mr. W. Pengelly.

“The Great Prairies and the Prairie Indians.” By Mr. W. Hepworth Dixon.

“Inhabitants of the Cyrenaica and Western Libya.” By Captain Lindesay Brine, R.N.

“On Type Polymorphism and Variation, in relation to the Origin of Species.” By Mr. B. T. Lowne.

“Remarks on Language and Mythology, as Departments of Biological Science.” By Mr. E. B. Tylor.

“On Sixteen Eskimo Skulls.” By Professor Rolleston.

“Sepulchral Remains in Southern India.” By Sir Walter Elliot.

“On the Difficulties of Darwinism.” By the Rev. F. O. Morris.

“On the Physiology of Language.” By Dr. Hughlings Jackson.

“On the Seat of the Faculty of Articulate Language.” By Prof. Paul Broca.

“On the Power of Utterance, in respect of its Cerebral Bearings and Causes.” By Mr. R. Dunn.

“The North-east Turkish Frontier and its Tribes.” By Mr. W. G. Palgrave.

“On the Uigurs.” By Professor A. Vambéry.

“Nomade Races of European Russia.” By Mr. H. H. Howorth.

“On the Tehuelche Indians of Patagonia.” By Consul T. J. Hutchinson.

“On the supposed Differences in the Minds of Men and Women with regard to Educational Necessities.” By Miss Becker.

Many of these papers contained new facts and incidents, possessing more or less anthropological interest; but we do not purpose going into any of them on the present occasion.

With regard to the Prehistoric Congress, there was no lack of matter of value and importance, for the most part contributed by our own countrymen. The attendance at the Congress was not a very large one, unless, perhaps, on a few occasions, when papers of un-

usual interest were being read; for instance, that by Prof. Huxley "On the Distribution of Races of Mankind as bearing upon their Antiquity." It was unfortunate that the two great meetings should have been held at the same time and place, as it was quite impossible for members of both to attend many of the meetings. This inconvenience will not happen next year; and it is to be hoped—indeed, we have no doubt on the matter—that an Anthropological Department will be nominated as at Nottingham. This year, too, Ethnology was detached from Geography, and was not represented by any department of the British Association; whether hereafter it will be tacked on to Anthropology, time will determine.

Of the papers brought before the Congress, without venturing to classify them under particular heads, they numbered twenty-six, according to the daily programmes, and were upon the following subjects:—

"On the Condition of Prehistoric Races, as inferred from Observation of Modern Tribes." By Mr. E. B. Tylor.

"On Stone Circles and Alignments."

"Notice of Groups of Cists in Aberdeenshire and Ross-shire."

"Note on Sculptured Stones in Scotland." By Mr. John Stuart.

"On Wayland's Cave and the Sarsden Stones, Vale of White Horse, Berkshire." By Mr. A. L. Lewis.

"On Rude Sculptures in various parts of the World." By Mr. Hodder M. Westropp.

"On the Antiquities of the Pacific and South Sea Islands." By Mr. J. H. Lamprey.

"On the Distribution of the Races of Mankind, as bearing upon their Antiquity." By Professor Huxley.

"On Crania discovered in Caves on Windmill Hill, Gibraltar, associated with Implements of Stone and Bone." By Prof. George Busk.

"On the Discovery of Human Remains in Caves in Perigord." By M. Louis Lartet.

"On some Human Crania." By Professor Broca.

"On the Mode of Sepulture observable in late Romano-British and early Anglo-Saxon times in this country." By Professor Rolleston.

"On the Antiquity of the Iron Works of the Weald." By Mr. W. Boyd Dawkins.

"On some Flints from near Bury St. Edmunds." By Mr. Henry Prigg, Junr.

"On the Manufacture of Stone Implements in Prehistoric Times." By Mr. John Evans.

"On Prehistoric Sepulchres in Algeria." By Mr. J. W. Flower.

"On Prehistoric Sepulchres in Brittany." By Rev. W. C. Lukis.

"Exhibition of Flint Implements from the Quaternary Deposits near Paris." By M. Reboux.

"On Quartzite Implements of Drift-Type found in Laterite Deposits of Madras." By Mr. R. Bruce Foote.

"On Sepulchral Remains in Southern India." By Sir Walter Elliot.

"Exhibition of Flint Implements." By Mr. Robert Fitch.

"Exhibition of Collection of Eskimo Stone Implements." By Mr. Edward Whymper.

"On Stone Implements from Japan." By Mr. A. W. Franks.

"On the Mammalia associated with Prehistoric Man." By Mr. W. Boyd Dawkins.

"On the Ogham Monuments of the Gaedhal (Gael)." By Mr. Richard Robert Brush.

"On the Ruins of Hajar Kim." By Mr. P. Furse.

"On the Curvature of the Tusks in the Mammoth from Ilford, compared with those from Siberia." By Mr. Henry Woodward.

"On the Connexion of Prehistoric and Historic Ages in Western Asia." By Mr. Hyde Clarke.

"L'Age du Renne en Maçonnais." Par MM. H. de Ferry et A. Arcelin

(Signed)

Oct. 23, 1868.

G. DUNCAN GIBB, Bart.,

Chairman of British Association Committee.

Report on the International Congress of Archaic Anthropology.

By ALFRED L. LEWIS, F.A.S.L.

The Congrès International d'Anthropologie et d'Archéologie Préhistoriques, of the formation and history of which a short account was given in the April number of the *Anthropological Review*, met, for the third time, in August last, at Norwich, with the somewhat abbreviated title, for the time being, of the "International Congress of Prehistoric Archæology."

The proceedings, which were participated in (amongst a number of other *savans*, British and foreign) by Messrs. Broca, Nilson, and Vogt, were opened, on the 20th August, by an inaugural address from the President (Sir John Lubbock, Bart., F.R.S., etc.). In the course of this address, which attracted a larger audience than any of the subsequent proceedings, Sir John Lubbock gave a sketch of the formation, history, and objects of the Congress, and paid an appropriate tribute to the memory of M. Boucher de Perthes, and other eminent archæologists lately deceased. He vindicated the manner in which prehistoric antiquities were being studied, discussed, at great length, the evidence upon which the distinctions between the palæolithic, nœolithic, bronze, and iron ages were drawn, and concluded by impressing upon his audience the desirability and necessity of studying the archaic monuments of our own country, and the characteristics of those races in other countries who were still living under the stone age, before the materials for such studies, which were in both cases rapidly disappearing, should be entirely destroyed.

The Committee of Management had issued a kind of programme, detailing twelve classes of subjects relating to the earliest existence, physical characteristics, habits, manners, customs, manufactures, buildings, and implements of prehistoric man, and to the fauna associated with him, upon which it was desirable that information should be obtained, and the papers received, in accordance with this programme, were so numerous that we can only briefly notice each, referring for further particulars to the Proceedings of the Congress when published.

The real business of the Congress was commenced on Friday, 21st August, by Mr. E. B. Tylor, who read a paper "On the Condition of Prehistoric Races, as inferred from observation of Modern Tribes," the general object of which was to illustrate the customs of the prehistoric populations of Europe, and explain the uses of objects found in their interments, and the purposes for which they were buried, by the customs and implements in use among other nations of the historic period. This was followed by three papers from Mr. John Stuart (author of "Sculptured Stones of Scotland"), on "Stone Circles and Alignments," on "Groups of Cists in Aberdeenshire and Ross-shire," and on "Sculptured Stones in Scotland." Mr. Stuart maintained the theory that the stone circles were exclusively used as sepulchral monuments; and it happened, curiously enough, that the next paper (on "The Sarsden Stones, etc., Berkshire," by Mr. A. L. Lewis, F.A.S.L.) took up the opposite view, namely, that their primary use was as places of worship, their use as places of sepulture being merely subsidiary, as is the case with our own churches. We believe that the extensive remains known as the Sarsden Stones, had never been described before, having been considered by topographers as a natural phenomenon; but this point was lost sight of in the discussion, which mainly turned upon the question of the uses of the stone circles. The next paper was by Mr. Hodder M. Westropp, F.A.S.L., etc., on "Rock Sculptures in various parts of the world," which he considered as being mainly the product of the idle hours incident to a pastoral life. In the course of the paper he also introduced some of the suggestions as to the sequence of phases of civilisation and contemporaneous implements, which he laid before the Anthropological Society of London during the Session 1867-8. The day's proceedings were brought to a close by a paper from Mr. Lamprey (the Librarian of the Royal Geographical Society) on "The Antiquities of the Pacific and South Sea Islands," in which he expressed the opinion, based upon the magnitude of the monuments, that they must have been the work of some other race than the present inhabitants, or that the latter must have degenerated vastly from their ancestors. These views were, however, combatted by Professor Huxley, and most of the participants in the discussion which ensued.

It had been proposed to devote the Saturday to an excursion to the Drift Beds of the Valley of the Little Ouse, but as it unfortunately happened to be very wet and stormy, an ordinary session was held, at which Mr. Busk exhibited a large number of stone implements from the Cape of Good Hope, and Mr. Boyd Dawkins also exhibited some human and other remains from Spain, which he considered, on what were thought by some to be hardly sufficient grounds, to be the remains of cannibal feasts. Mr. Heywood then read a paper on Legends of celebrated archers, which, although its connection with the programme of the Congress was not very plain, contained much that was interesting. Taking the popular history of William Tell, the authenticity of which he denied, he traced a similar legend in various forms and with various dramatis personæ, from an oriental source, and through Scandinavia into Switzerland; and this legend,

which he thought was the foundation of the Tell story, he also suggested might tend to prove a connection between the various peoples he had mentioned. This day's proceedings were closed by a paper from Mr. Ellis, on flint-flakes, from the submerged forest of Barnstaple, North Devon, which elicited a lengthy conversational discussion.

Refreshed by a day's rest or wearied by a day's compulsory idleness, as the case might be, the Congress re-assembled on Monday morning to hear a paper, or rather a lecture, from Professor Huxley, on the distribution of the races of mankind, as bearing upon their antiquity. The views which Professor Huxley enunciated in this paper, were in some respects similar to those which have been propounded to the Anthropological Society by Mr. C. S. Wake; after dividing mankind into five leading groups, he observed that he found two, the Australoid and the Negroid, scattered over parts of the world, separated from one another by the Indian and Pacific oceans, in such a manner as to lead him, having reference to their present state of civilisation and general characteristics, to believe that these races had been in existence at a time when a land communication existed between Australia and the Deccan on the one hand, and South Africa, Malacca and New Guinea on the other. It may indeed seem to some that the difficulties attendant upon this theory and its requisite machinery of convulsions, junctions, and separations are as great in their way as those which it is intended to remove, but for all that Professor Huxley's opinions are fully entitled to the profound attention which was accorded to them by a larger audience than attended any of the proceedings of the Congress, with the exception of the President's inaugural address. This paper was in more than one respect the great event of the Congress, as Professors Vogt and Broca both took part in the discussion which followed, M. Vogt generally in support of, and Dr. Broca, to a certain degree, in opposition to Professor Huxley's views, the latter considering that his classifications were based rather on superficial than anatomical characteristics. Mr. Busk, F.R.S., then read a paper on some crania discovered in caves on Windmill Hill,—not the hill dear to cockney frequenters of Gravesend, but one of the same name at Gibraltar. These crania, which were associated with implements of stone and bone, were of considerable interest. A valuable communication from Dr. Broca on the recently discovered remains in the caves of Périgord, the substance of which has already appeared in the *Anthropological Review*, for October, terminated the proceedings of this day.

On Tuesday, papers were read by Professor Rolleston, F.R.S., on the modes of sepulture, observable in late Romano-British and Anglo-Saxon times in this country, periods which can hardly perhaps be considered pre-historic, though wrapt in much obscurity, owing chiefly to the persistency with which the British accounts and traditions respecting them have been ignored and rejected; by Mr. Boyd Dawkins, F.R.S., on the Roman or perhaps British iron works of the Weald; by Mr. John Evans, F.R.S., F.A.S.L., Hon. Secretary of the Geological Society of London, on the manufacture of stone implements in pre-historic times, a very elaborate and interesting communication, illus-

trated by practical experiments; by Mr. Flower on pre-historic sepulchres in Algeria, shewing the connection between the megalithic monuments of North Africa and Europe; appropriately followed by one from the Rev. W. C. Lukis, on pre-historic sepulchres in Brittany; by Mr. Bruce Foote, on quartzite implements of drift type found in laterite deposits of Madras, which were of the same forms as the flint implements found in Europe; and by Sir Walter Elliott, on sepulchral remains in Southern India. The interest of the proceedings was much enhanced by the exhibition of large numbers of specimens belonging to M. Réboux of Paris, Sir Walter Elliott, Mr. Foote, and Mr. Fitch, the Sheriff of Norwich.

Wednesday being the last day for reading papers, it was proposed to hold an evening meeting, to dispose of those which might remain after the labours of the morning. The papers read this day were by Mr. A. W. Franks on Stone Implements from Japan, from which it appeared that the Japanese, like the Shetlanders, considered these implements to be thunderbolts; and that the forms of the Japanese implements resembled those of Europe; by Mr. Boyd Dawkins, F.R.S., on the mammalia associated with prehistoric man, a very elaborate and exhaustive communication; by Mr. H. Woodward, on the curvature of the tusks in the mammoth from Ilford, compared with those from Siberia; on the Ogham Monuments of the Gaedhal, from Mr. R. R. Brash, who considered that these monuments were of Spanish origin and of great antiquity, views which it may be supposed did not meet with unanimous assent; and from Messrs. de Ferry and Arcelin on the Reindeer period, in certain parts of France.

The remainder of the week was chiefly spent in London, where it was arranged for the Congress to visit the College of Surgeons, the British Museum, the Christy collection, and other places of interest, a final meeting being held at the rooms of the Society of Antiquaries, when it was arranged that the Congress of 1869 should take place at Copenhagen.

Owing probably to the counter attractions of the section meetings of the British Association, the meetings at Norwich were not on the whole so well attended as might have been anticipated, which was much to be regretted, since the proceedings were, as may be judged from this imperfect sketch, of a most interesting and valuable character.

Thanks were voted to Sir Duncan Gibb and Mr. A. L. Lewis for their Reports.

Mr. DENDY then read a Paper on Anthropogenesis, which he prefaced by quoting the remark of a Rt. Rev. Doctor at Norwich, that it was the duty of every man of faith to inquire more, and of every man of science to believe more; and he said that it was in that spirit that the paper was written:—

(Abstract.)

The paper referred to the two contrasted opinions regarding the genesis of man, creation and evolution, analysing the dogmas of Lamarck and Oken (to the rejection of all historic testimony), and the hypothesis of Mr. Darwin, transmutation or natural selection. It was argued, that the origin of man in the evolution of a monad (a process in which, in

Mr. Darwin's words, "force almost creates in production"), is as great a mystery as the creation of a man. Allusion was made to the experiment of Crosse, of Bristol, the vitalising or evolution of an insect from inorganic matter. Spontaneous development, the doubt of a first cause, necessitates, of course, the possibility of an effect without a cause. Passing over the zoophytes and lower animals, the paper discussed the subject of transmutation, by a happy accident in the act of generation of the most anthropomorphous of the simiæ, the Chimpanzee, into perfect man. Yet, this man-like ape, with all his association with man, is absolutely deficient in the most noble endowment or faculty of speech, although provided with vocal organs almost identical with those of man; while pies, and daws, and parrots, can, by imitation, articulate the human language. It is strange, if transmutation be a fact, that during the whole historic period, not the slightest approximation to the "missing link" has ever been noted in the generative accident of a monkey; indeed, the ape has seemed rather to have retrograded in his anthropomorphism. In referring to the most important comparative anatomy of the skull and the brain, allusion was made to the rudimental lateral ventricle and the non-overlapping of the cerebellum, arising from an arrest in the growth of the cerebrum in the simiæ; the brain of the young Chimpanzee and the infant so closely resembling each other. In reference to palæontology, in proof of their theory, the disciples of Darwin taboo all historic testimony of the Jews, and adopt the testimony of the rock, and yet palæontology, with all their specious advocacy, has proved little or nothing for transition. Then, the equatorial apes and dwarfs (the highest simia and the lowest homo), although for ages in juxtaposition, have never been known to "cotton" together. The contemplation of this persistent degradation, certainly favours Max Müller's assertion, that the chasm between ape and man can never be bridged over.

In favour of plurality of race, in coincidence with Rudolf, Vogt, etc., allusion was made to the greater difference between the Chimpanzee and Gorilla, than between the Mandingo and the Guinea Negro, the latter of whom has never, in any climate, changed his form, his colour, or his wool. The historic traditions of Genesis were adduced in illustration of polygenesis, Adam being the archetype of the last creation, the Aryan or Caucasian variety; the word man being, therefore, considered a generic term, signifying mankind. Holy writ may, therefore, be congenial with historic anthropology; Shem, and Ham, and Japhet being the progenitors of the three races, with which number Cuvier was content to form his classification.

The paper, therefore, did not agree with Mr. Darwin or Sir John Lubbock regarding the simial parentage, or the "utter degradation" of man in his primitive form.

The following gentlemen joined in the discussion.

The Rev. DUNBAR HEATH observed that the central point of the paper appeared to be, whether it is more likely that there should have been an original creator of organised matter than that monads should have been developed from inorganised matter. He had been accused of being an atheist, he would therefore state what his opinions were, that

it might be seen whether that term was correctly applied. He thought that they might feel there is a God and trust to Him ; but they did not know him. The composite organism called man was a duality consisting of intelligence and feelings, including moral feelings. Though the two were in all actions united in one, they were logically distinguishable ; thus it was possible to feel what they did not know, and to know what they did not feel. For instance, he felt the heat of the fire but he did not know the nature of heat ; no one knew anything of the cause of heat, there was no novelty in that opinion ; it was admitted that feeling was different from knowing. Knowing was also distinct from feeling : it was known, for example, that two sides of a triangle are greater than the third, but they did not feel it ; the knowledge was not accompanied by any emotion ; he knew it logically, but he had no feeling of it. Having thus shown the paths by which they must travel, they might trace the source of man's belief in God. It was found that in all times of man's experience, whether of sorrow or of joy, he feels there is a God ; in times of misery man leans upon a God, and he does the same in times of happiness. No society could wipe away that feeling—mankind, it must be admitted, accepts a God. He did not deny that. But it was a different matter when the question came to be examined in a scientific society, whether it was more probable that the origin of man was by creation or evolution. It was a million times more probable, in his opinion, that a living monad was evoked from inorganic matter than that it should have been created. By the latter hypothesis it was attempted to explain a little mystery by one a million times greater, for it was more easy to conceive the original existence of a monad than of a God. The Hebrews solved the difficulty by conceiving their deity to be an organised being, who clothed himself with light as with a garment, and was surrounded with organised matter as a vestment,—the strength of the hills is His also. That was the Hebrew way of getting out of the difficulty. But the Greeks, in their Septuagint, altered the Hebrew Bible to introduce the idea of a pure spirit ; he thought that in sketching the question as he had done he had logically given an answer to the paper. With regard to such matter they knew nothing about it, they only knew the phenomena of matter ; the phenomena could be weighed, their effects could be calculated, and their properties might be known ; but of matter itself nothing could be known. They might assume certain things, they might conceive points endowed with certain forces and call them matter, but it was merely a name ; they did not know matter ; and in the same way they might speak of God, but they knew Him not. Referring again to the paper, he said he did not think that Mr. Dendy had shown that creation was more probable than evolution ; he could not conceive independent creation, but he could conceive it to be possible that a little carbon, hydrogen, and oxygen being the centre of certain forces might, by their mutual actions, produce a fourth force, and that might be an organic force and act according to a type. Organic forces act with a purpose, and might produce others ; how organic forces could be evolved from forces not organic they did not know, but he contended that it was a millionfold more improbable

that such forces should have been created than that they should have evolved.

Mr. PIKE considered the basis of the paper to be the theory that it is more probable that a creator has produced man than that man has been evoked from a cell. He felt great difficulty in discussing any subject which seemed to require a confession of faith. As a matter of opinion, he thought Darwinism might as easily as any other scientific view be reconciled with scripture; but inasmuch as the paper was avowedly founded in fact upon the Bible, he felt that he could hardly call its conclusions in question without exciting a suspicion that he wished also to call in question the book upon which it was founded. He did not see how it was possible to discuss the paper without the introduction of subjects which a scientific society should avoid.

DR. DUNCAN said that the Committee of Investigation, whose recommendation had been alluded to, had no wish to limit reasonable discussion upon sacred subjects; but it considered that it was not advisable to publish every thing that might fall from the Fellows in the course of a free and open debate. He was hardly prepared to hear Dr. Dendy's paper treated in a metaphysical manner, and although he admired the eccentric arguments he had heard, he considered that the Fellows should limit themselves to the analysis of concrete facts. The question really was, not as Mr. Dunbar Heath had put it, but did man come from an ape? Darwin had never written a passage which asserted the ape origin of man, and it was not fair, nor according to scientific logic, to infer from passages in the *Origin of Species* that such was Mr. Darwin's opinion. In no place had Mr. Darwin asserted the origin of the monad from inorganic matter, but he had protested that analogy was an unsafe guide. Dr. Duncan considered that the reason why Mr. Darwin had not carried his theory farther was because he had insufficient data, and he thus gave a tacit reproof to scientific men who like to jump at conclusions upon very slight facts. There was at present no more right to assert that man came from an ape than that the species of a genus well and structurally separated from those of another descended genetically. The structural peculiarities of the nervous systems of men and apes had much in common, but there were considerable microscopical differences, some of which had lately been published by Lockhart Clarke in the *Philosophical Transactions*. Nevertheless, it was an uncomfortable fact that the anomalies in the origin and insertion of muscles in man were normalities in the ape. The "sports" were backwards to the quadrumana. Whatever was the truth, it was evident that in Holy Writ man came from "the dust;" and if so, whence comes the monkey? metaphorically from "the earth."

Dr. CRISP said he had listened to Mr. Dendy's paper with much pleasure, and although not opposed to Darwin's theory, in the main, he thought, with Mr. Dendy, that the line of demarcation between the apes and the human species was so well marked, that he felt surprised that any persons who had studied the anatomy of the quadrumana could come to a contrary opinion. He could say a great deal upon this question, but he would only occupy the time of the Society in

alluding to a few important points. The anthropoid apes and the generality of the monkeys had a dark-coloured sclerotica; the spinous processes of the cervical vertebræ of the gorilla were longer than those of the lion, rhinoceros, or hippopotamus, the thirteen ribs of the gorilla and of the chimpanzee; the absence of skull-sutures; the absence of the ligamentum teres of the hip-joint; the want of the styloid processes; the rudimentary mammillary processes, and many other osteological characters might especially be mentioned. But when we came to the visceral anatomy of the anthropoid apes, of the gorilla, for example, as he (Dr. Crisp) had recently shown at the British Association, what a difference was observed! No valvulæ conniventes in the intestines, in the gorilla the cæcum and large intestines of enormous size, and furnished with glands differing materially from those of men; a tripartite liver, and other peculiarities which time would not allow him to mention. Those who supported the transition theory of ape to man, Dr. Crisp thought, were like special pleaders, who saw the resemblances but forgot the differences. In 1864 he had heard Professor Huxley state in his lectures at the College of Surgeons, that anthropoid apes had no penis-bone. Not satisfied with this statement, he, Dr. Crisp, as on other occasions, determined to judge for himself, and in more than a dozen anthropoid apes (chimpanzees and ourangs) he had found a penis-bone in all; the gorilla he could not speak of, as one he had examined was a female, and in the other the organs of generation were absent. In a young ape, sent over in spirits, said to have been a Koolookamba (Nshiego-mbouvé), he did not find a penis-bone. The question as to the existence of a penis-bone in the gorilla was one of great interest; he had placed on the table the penis-bones of the orang and chimpanzee, and of many species of monkeys that he had dissected.

Dr. CARTER BLAKE thanked Mr. Dendy for a thoroughly philosophical paper, which bore out his (Mr. Dendy's) high reputation as a scientific man. He was glad to see that the Anthropological Society maintained their old character of producing the strongest advocates against the Darwinian theory; Mr. Dendy had spoken of Darwin as if he were the Coryphæus of the transmutation hypothesis, but it ought to be remembered that Professor Owen (whose writings had been strangely misinterpreted by the less educated class of Darwinites, in and out of the Society,) whilst opposing Darwinism, had long advocated a rational system of accounting for the origin of species according to the method of "derivation by secondary" law exemplified in his "Anatomy of Vertebrates." He expressed what he thought of those Darwinites who could not appreciate scientific investigation, and could only pick up the garbage which Lamarck and Darwin dropped, and he wished such scientific dabblers would just try to find out what it was that Prof. Owen really said and really meant. With regard to Peter, the wild boy, to whom Mr. Dendy had alluded, cases of the same kind were described in Professor Vogt's "Memoir on Microcephali." As regarded the "hippocampus minor" controversy, he was glad to see that Mr. Dendy, an anatomist "loyal et compétent," was on the right side, and agreed with Tiedemann, Cruvelhier, and Owen, that the structures

called the "third lobe," "posterior horn of lateral ventricle," and "hippocampus minor", were peculiar to, and characteristic of man, while absent in the brains of the highest apes. Less reliable anatomists had impugned this, but in the year 1868 the truth might as well be told. Mr. Dendy had selected the chimpanzee as the species of ape most closely allied to man. As its muscular system had been thoroughly investigated, the chimpanzee might most certainly be most convenient for comparison; but in his (Dr. Blake's) opinion the gorilla was the species which most resembled man. The faculty of speech had been stated by Dr. Broca to be coincident with one of the frontal convolutions of the brain, a convolution which might be conveniently called "Broca's convolution." Mr. Dendy had shown that that convolution was developed in man to a greater extent than in the apes. Dr. Blake said he was much pleased with the collection Dr. Crisp had exhibited of the penis-bones of various apes, and he could not but notice that the size of the penis-bone seemed to bear no relation whatever to the size of the animal; it was as large in the small bonnet-chinois monkey (*Macacus sinicus*) as in the chacma (*Cynocephalus porcarius*). In the koolookamba, as Dr. Crisp said, it might be absent, and that was a very strange fact, as the koolookamba, according to Du Chaillu's description, was more closely allied to man than any other ape. Though Mr. Dendy's facts were exceedingly well marshalled to oppose the hypothesis of transmutation, they should not make Fellows of the Society forget that the human remains of greatest antiquity are certainly the most anthropoid. Dr. Blake, in conclusion, observed that as it seemed to be the fashion that evening for gentlemen to make their confessions of faith, he would say that his conviction was that the differences between man and ape did not consist in speech, mind, soul, and thought, but in anatomical differences; the distinction between the sub-class archencephala, comprising man alone, and the sub-class gyrencephala, being enormous. Mankind differed from the apes by distinctions which could be tested by the scalpel, the callipers, and the measuring tape, and by nothing else.

On the motion of Mr. MACGRIGOR ALLAN, seconded by Mr. MACKENZIE, the debate was adjourned to the 17th of November.

NOVEMBER 17TH, 1868.

SIR DUNCAN GIBB, BART., VICE-PRESIDENT, IN THE CHAIR.

THE Minutes of the previous meeting were read and confirmed.

The following list of presents was then announced:—

FOR THE LIBRARY.

From the AUTHOR—Ancient Faiths (second copy); On Myalgia; The Preservation of Health; Foundation for a New Theory of Medicine; Spontaneous Combustion; On Ancient Pillar Stones and Cairns; Is Alcohol Food? Dr. Inman.

From the SOCIETY—Bulletins de la Société d'Anthropologie de Paris.

From the SOCIETY—Proceedings of the Royal Society.

From the EDITOR—Medical Press and Circular.

- From the SOCIETY—Proceedings of the Royal Asiatic Society of Bengal, 6, 7, 8; Journal 1, 2, and Ex. No.
- From the INSTITUTE—Proceedings of the Essex Institute, January and April, 1868.
- From the COLLEGE—Annual Report on the Museum of Comparative Zoology at Harvard College.
- From the SOCIETY—Memoirs of the Boston Society of Natural History: Annual, 1868-9; Report, May 1867-8: Proceedings, Vol. XI, 1860-8.
- From the INSTITUTION—Annual Report of the Board of Regents of the Smithsonian Institution.
- From the AUTHOR—Fresh-water Shell-heaps of St. John's River, East Florida. Dr. J. Wyman.
- From the AUTHOR—Handbook of Archæology. Hodder M. Westropp.
- From EDWARD JARVIS—Census of United States Mortality and Population, 2 vols., 4to. J. C. Kennedy.
- From SIR DUNCAN GIBB, Bart.—The Laryngoscope in Diseases of the Throat: Sir Duncan Gibb, Bart. Annual Address of Geological Society of London, 1846-59, 47 and 51. The Mineral Waters of Vals: Dr. Tourrette. Essay on the Mineral Waters of Eaux Bonnes: Dr. L. Leudet. The Book of the Chronicles of the City of many Fountains, chap. xxxi.

The DIRECTOR announced that the Council had resolved that, for the future, any member of the Society who sent to the Secretary addressed and stamped envelopes, corresponding to the number of evening meetings in the Session, would receive a printed slip of the Proceedings the day after each meeting.

The adjourned discussion on Mr. Dendy's paper on "Anthropogenesis," read at the previous meeting, was then resumed.

Mr. KENNETH R. H. MACKENZIE said there was one thing in the paper, in reference to his lamented friend Mr. Crosse, on which he desired to make a few remarks. The discoveries of that gentleman, of electrical *acari*, were spoken of as the result of experiments undertaken for the purpose of developing them; but that was not so. The spontaneous generation of these *acari* was quite unexpected by Mr. Crosse, and was the result of an experiment undertaken with a different object; he subsequently instituted exact experiments. The first experiment had been continued for 212 days in a darkened room, when, on looking at the apparatus, he observed a number of white spots, which budded into worms, and then assumed the appearance of scaly insects. In another experiment, in which an oyster-shell had been subjected to electrical action for one hundred and forty-eight days,—the healthy oyster disappeared, and a marine plant grew out of it. Mr. Mackenzie further explained that Mr. Crosse had no desire to make known the spontaneous generation of electrical *acari*; but that a conversation between him and the poet Southey having been overheard by the editor of a Taunton paper, the discovery was blazoned forth with much exaggeration, and against his wish. He had been personally acquainted with Mr. Crosse, and would, with the chairman's permission, read a letter on the subject.

June 12th, 1853. Broomfield, Sunday.

My dear Sir,—The experiment to which you allude in your communication, and which was very carefully carried out, was the following:—

I prepared a tubulated glass retort, through the tube of which was passed a wire of platinum, *hermetically sealed*, standing vertically in the bulb of the retort. The glass tube fitted *air-tight* into its neck. This retort was supported by a wooden frame, and its open end dipped into a glass cup of mercury, from which proceeded a long wire of platinum through the whole length of the retort, and was bent at right angles where it entered the bulb, so as to be *parallel* to the first wire, about two inches distant from it. The bulb was half-filled with a carefully prepared solution of *silicate of potash*. The opposite poles of a sustaining battery were connected with either wire, and a *weak electrical current* kept constantly passing from wire to wire, decomposing the liquid in the bulb. Oxygen and hydrogen gases were given out constantly, which were liberated from the mouth of the retort, and slowly bubbled out through the mercury in the glass cup. No *communication* with the atmospheric air was possible. The solution was *highly caustic*, and the atmosphere of the retort was, of course, *explosive*; and yet, in this caustic solution, and yet, under this explosive atmosphere, *one single* remarkably fine acarus made its appearance on the hundred and fortieth day. The apparatus was kept in a dark cellar.

I give no opinion as to the cause of the appearance of this acarus, not having formed any opinion on the subject. I have now fresh experiments in action on the connexion of electricity with animal and vegetable life.

You are welcome to do as you please with this letter, and I beg to remain, dear Sir,

Yours sincerely,

Kenneth Mackenzie, Esq., F.S.A.

ANDREW CROSSE.

Mr. A. L. LEWIS said, in reference to the allusions to the apparent contradictions in the accounts of creation given in the first and second chapters of Genesis, that there were no differences in them that might not be reconciled. He agreed with Mr. Dendy in thinking that it is far more easy to believe in the existence of a Creator than in the springing up of everything spontaneously, no one knew where nor how. He thought, however, it was a pity that any discussion should have arisen on that point, as it was impossible to bring forward conclusive evidence on either side, and, therefore, no practical end could be attained.

Mr. DIBLEY considered there was not sufficient evidence to justify any convictions on the matter, and that it was not possible, by any scientific investigation, to arrive at a satisfactory conclusion. There was a potency of form in Nature, the cause of which could not be grasped by science. Thus, life is a potential form, and the matter in which it is made apparent is nothing more than an inert mass. The connection between them was, however, beyond human comprehension, and not until man had some higher powers given to him could

they properly discuss the subject, and arrive at any scientific conclusion. The only way to arrive at a rational conclusion on the matter was to reason from a general principle. There was known to be a certain perfect order in all things, governed by certain laws, and the most rational explanation appeared to be to allow the existence of a Being, who is order and perfection in himself.

Major OWEN thought that Mr. Dendy was right in reference to Holy Writ, and that if the facts stated rested on a basis that was untenable, it was better to get rid of them.

Mr. DENDY in accepting the confession of faith of the Rev. Dunbar Heath, said, he would waive all polemical allusions, and the discussion of the metaphysics of Berkeley, and limit the arguments between Mr. Heath and himself to the question regarding the inorganic monad, and the vitalised ovulum. Mr. Heath affirmed his belief that it was a millionfold more difficult to accept the idea of a creation, than that of a monad. Why? They were both assumptions; but for one there was tradition, for the other there was not. Admitting the existence of the ovulum in preference to the monad, we could reason on and accept its evolution, a process that is hourly exemplified in the uterus of a mother, and thus we might readily conceive the origin of historic man. In confirmation of his views, he might cite the objection to the monad of many an accomplished Anthropologist, especially that of Paul Broca. (Mr. Dendy read a passage from the works of Dr. Broca, clearly illustrating his decisive opinion.) In alluding to the comments of Mr. Pike on his reference to Holy Writ, Mr. Dendy reminded him that he only adduced the historic tradition of the Bible in his illustration of Polygenesis, as he would the record of Josephus, or the "Disquisition on Ancient India," by Robertson. Of the devotional and theological portion he had been scrupulously reticent. Mr. Dendy expressed his thanks to Dr. Crisp for exhibiting his valuable specimens of the *os penis* of apes, as a very prominent exemplification of the comparative dissimilarity of the apes to man. In referring to the speech of Dr. Carter Blake, he was gratified that Dr. Blake thought that the comparative anatomy of the paper strongly supported the difference between man and ape: yet he (Mr. Dendy), thought that the condition of the mental faculties (so to speak), was even of greater importance than the structural forms: the power of speech, for instance, afforded a powerful example of this distinction; the organic structure appertaining to utterance, being closely resembling in man and ape, yet the endowment or faculty of speech being utterly wanting in the simiæ. Regarding the Neanderthal and other skulls (casts of which were before him), there had been very great exaggeration. We might light on crania of equal deformity in men of the present day; and with respect to palæontological "finds", there was often much suspicion. The quarrymen of France were known to practise frauds—for instance, their own manufactures of them, *langues du chat*, were often offered and accepted as flint-arrow heads. Mr. Dendy then exhibited the skeleton of a rickety abortion, which he himself had delivered, and which, he believed, had it been found in strata associated with the relics of extinct mammalia, would have been

readily accepted as the "missing link". But, even if we found the treasure, it would not prove the Transmutation Theory. It might indicate degradation of species, as well as exaltation, the regress as well as the progress of man; favouring the notion of the Oceanic savage that the ape is a dwindled and degraded man. With regard to the Electric Acarus of Mr. Crosse, alluded to by Mr. Mackenzie, it did not add weight to the theory of spontaneous generation: it might have been the excited evolution of some minute vitalised ovulum, lying latent, even for ages, like the mummy wheat of the Egyptian.

Dr. Charnock, F.S.A., F.R.G.S., V.P.A.S.L., read a paper, written by himself and C. Staniland Wake, F.A.S.L., on "Language as a Test of Race".

[*Abstract.*]

The question, as to whether language is a test of race, is really one of probabilities. Is the race affinity of two peoples, speaking the same language, probable? The affirmative would appear to be almost self-evident, when it is considered that peoples related to each other do generally speak the same, or a dialect of the same, language. This is not only probable, but certain, in many cases; and it may be laid down as a general proposition, therefore, that peoples speaking the same, or dialects of the same, language are racially related: that is, that language is a test of race. The value of this test, however, depends on its agreement with the tests of history, physical structure, religion, and customs, the application of which will either weaken or strengthen the argument derived from linguistic affinity. The objection urged against language being a test of race, derived from the fact of some peoples having changed their language, may be met by showing that every instance of such a change has been the result of circumstances so special, that this loss of language can have taken place only in a limited number of cases. Doubtless, where peoples have taken the language of their conquerors, language loses its value as a race-test. Even these instances, however, may be provided for by enlarging Waitz's proposition, so as to include those peoples who have only temporarily ceased to exist as such. These may be divided into two classes, of which the first will include the case of a semi-civilised people conquered by one much more highly civilised. Under these circumstances, the substratum of the aboriginal language will probably always continue to exist. The second class will include the case of a people almost in a state of nature, conquered by a civilised race, which will generally be accompanied by the imposition of the language of the conquerors. Even here, however, the tendency to perpetuation in the ignorant mind (which in the case supposed would be that of the most primitive element of mixed peoples) of old customs and superstitions, would supply us with materials for correcting the false evidence of language. It has been said (in opposition to Prof. Max Müller's opinion) that some languages have a mixed grammar; and therefore, that as grammatical structure is the test of linguistic affinity, language cannot be a true test of race-relationship. This objection is, however, worthless. Languages do, indeed, sometimes present a mixture of grammatical forms, but it is merely because certain words have been borrowed

without undergoing alteration in the process. Grammatical terminations are accepted as part of the words thus borrowed. That these peculiar forms cannot be taken as proof of the existence of a mixed grammar, is shown by their not influencing the grammatical evolution of the words in the language with which they have become incorporated; and by their being governed in their own evolution, if they do ever undergo further change, by the genius of the language into which they have been translated.

The following paper by Mr. Hodder M. Westropp, "On the Origin and Development of Language," was then read.

A Few Words on the Origin and Development of Language. By
HODDER M. WESTROPP, Esq., F.A.S.L.

Language, like everything that has growth and progress, has its stages of development, its origin, progress and maturity. In discussing the origin of language, we should strictly confine ourselves to the consideration of language in its earliest stage alone, without introducing any irrelevant discussion as to the later modes of word formation, and to the corruption or decline of language, which have no connection with that of its origin, these belonging to later phases of its development. Each mode of word formation ought to be considered according to its stage in the development of language. In treating of the origin of language, it must, in the first place, be admitted that there is an innate aptitude in man to evolve language; for by his organic structure and by his faculties, he has been formed capable of framing speech. He has been furnished with intellect and organs of articulations necessary for that purpose. Language is as necessarily evolved and developed in man, according to fixed laws, as the development of mind, or as the natural growth of the human body. Secondly, that man's faculties are of a slow and progressive nature, and that, consequently, the evolution of language was of slow and progressive development. In this, man is distinguished from the lower animals, whose instincts are simultaneous with their birth, or spontaneously called into play at a certain period of growth. Thirdly, in considering language in its earliest phase, we should keep in view that man in his earliest stage,—the rude savage and the infant,—is a being of sensation before he is capable of thought, consequently he will give utterance to his sensations before he endeavours to express his thoughts.

These premises admitted, we shall find just grounds for believing that speech originated in those inarticulate cries instinctively expressive of pleasure and pain, joy and sorrow, primitive man's and the child's first utterances. Interjectional utterances, expressive of his sensations and wants, will therefore be his first attempts at articulating sound. This is the first stage of the development of speech. This is in reality the origin of language. All other modes form the progress and development of language. If we take the individual man as the basis of an analogy, with man in the aggregate, we may reason thus: As the individual man is born in a state of mutism and helplessness, and in his infancy cannot speak, until he gradually

learns to utter articulate sounds expressive of his sensations, and ultimately of his ideas: so man, in his primitive state, must have been a mute and speechless being, until by degrees in the course of his development, he learnt, like the child, to give utterance to those instinctive interjectional sounds expressive of his sensations and wants, and in the further development of his mind to words expressive of his thoughts and ideas. An undeserved odium has been cast on this view, and the terms low and degraded applied to it. A similar odium has been cast on the analogous view of the first stage of man's existence, as expressed by Horace. But, as Sir Charles Lyell remarks, they who in later times have embraced a similar theory, have been led to it by no deference to the opinion of their pagan predecessors, but rather in spite of very strong prepossessions in favour of an opposite hypothesis. In these views there is nothing inconsistent with analogy, nor is there any reason why the terms low, bestial, should be applied to these hypotheses, no more than to the certainty that we, now grown and mature men, were once helpless and speechless infants, as Shakspeare expresses it, "mewling and puking in the nurse's arms": man, like an upstart, in his pride of matured intellect, in his pride of acquired position, ignores his low and base origin. We may carry the analogy further. If the individual man is many months after his birth in a state of mutism, and incapable of articulating sounds, man in his earliest and primitive phase must have been for a long period in a state of mutism, and capable only of expressing his wants by gestures, and then by articulate sounds. Of this stage in the development of language, the Veddahs of Ceylon afford an example. Sir Emerson Tennent remarks, that so degraded are they that it has appeared doubtful in certain cases, whether they possess any language whatever, their communications with one another being made by signs, grimaces, and guttural sounds, which bear little resemblance to distinct words, or systematised language.

Articulate language, as in a child, was thus a slow and gradual acquirement, the instincts and intellect of man contributing to its advancement. It was the product of human sagacity, the result of many ages, rising from the rudest elements to its perfect culmination. To sum up, we may say that the power of speech is the gift of God, and that words are the product of the mind of man. The growth and progress of language, whether in the individual man, or in man in the aggregate, was coincident with the regular development of man's mind, in accordance with definite laws. In the second stage of the development of language (the development of mind and language synchronising,) man was a nomenclator. He formed certain sounds, which in his mind became associated with certain qualities and attributes of things: these he then applied to the things themselves. As some Indians call a horse a running thing, a gun a shooting thing, so children distinguish things according to their qualities, as a blue thing, or a white thing. By the means of these appellations, the ideas of them were recalled to himself and others, when the objects themselves were absent. One man named a thing, this name was uninquiringly, unconsciously adopted by another, then by another, until it

obtained a wide circulation ; like a coin new from the mint, it passed from hand to hand until it passed into the possession of almost every person in the country in which it was stamped. This process is still visible in schools, and suggests a comparison with that early stage of the development of language, when man was a nomenclator ; one boy gives another boy or a thing a name, or as commonly called a nickname, this is picked up by another boy, and then another, until it goes through the whole school. Thus the earliest process of name giving is still retained at the present day. Imitative sounds also began to contribute to the stock of words, for onomatopœia was a later development of word formation when man was led to invent words bearing a fancied likeness to sounds proceeding from animals and things, a marked distinction from the earlier articulations which are mere sounds of instinctive and spontaneous evolution. In the third stage of the development of language, when man began to form general ideas, words were invented as signs of those ideas. When man wished to become intelligible to his fellow men, a great progress in language began. At a more advanced stage, words were used conventionally.

The origination of words in primitive roots, is a stage of language in a more advanced phase, and argues a more reflective mind. Has a child when he gives utterance to such natural expressions as *papa*, *mama*, to pause and search for the root of these words ? Before he names his father and mother, has he to go through a process of ratiocination, which leads him to call his father *papa* from the root *pa*, to feed, as he is his feeder, and his mother *mama*, from the root *ma*, to fashion, as it is said ? It would be more rational and more consistent with the nature of the development of language, to suppose a mode of word-formation, the reverse of that suggested by Prof. Müller, and to attribute the origin of such words to the Greek *παῦ*, to feed, and the Sanscript *mâtar*, "maker," to the primitive instinctive sounds *pa*,—*ma*, first uttered by infants, and which are synonymous with the names of father and mother, in almost all languages. *Mâtar*, among the earliest Aryans had the meaning of "maker." To ascribe the origin of language to root formation, is a most untenable hypothesis. The words *papa* and *mama* obviously belong to the earliest stage of language, for they are the natural instinctive child-words of all races, as Sir John Bowring remarks, these two sounds (*po* father, and *me* mother, in Siamese,) or something approaching them, being the first lisps of infancy, may be found indicating the parental relations in almost every language of the world.

When language began to be developed among different races, to undergo varieties, and become separate idioms, radical, agglutinative and inflectional stages in its structure were evolved according to the greater or less refinement of organisation of the race in the bosom of which it was developed. Dr. Latham thus distinctly gives the sequence of these stages. "The first stage of language exhibits single words, chiefly nouns or verbs, in a short form, and with a minimum amount of inflection, some subordinate to the others, but still separate words. The Chinese is usually considered to be the type of language in this state. In the

second, the subordinate words coalesce with the main ones, but not so as to wholly conceal their original separate existence. Languages in this state are called agglutinative. This is the state in which most of the languages of the world exist. The Mantshu and Mongol are the usual examples of this condition, most other tongues, however, would serve as well. The coalition of the subordinate with the main word, having become so perfect, as for the former to look like a part of the latter, rather than a word originally separate, the combination becomes *amalgamate* instead of agglutinate, and the language inflexional. The Greek and Latin are types of this form". This inflectional stage, it is evident, is the most perfect stage of the development of language. But to reach this perfect stage, language must pass through the earlier stages of radical and agglutinative: as Müller remarks, we cannot resist the conclusion that what is now inflectional, was formerly agglutinative, and what is now agglutinative, was at first radical. "The mechanism of inflections, the grammatical constructions, the possibility of inversions, all are the offspring of our own minds, of our individual organisation; there is in man an instinctive and regulating principle, differently modified among nations not of the same race."—*Humboldt*.

From the evident uniformity in the development of the human mind, and the similarity in the organs of speech among all men, it is natural to find an analogous evolvment of language among all races. Certain first principles must have presided over the formation of languages, which were necessarily observed by all, and consequently led to some general resemblances. Unity in language is, therefore, the result of the unity or uniformity of the development of the human mind among all races, a unity in the processes by which language is evolved in all countries; for the working of men's minds is nearly alike according to the stages of the development of men's intellect.

The stages of language were evidently synchronous with the phases of mind and civilisation of any race, as Sir G. Wilkinson justly remarks, "Turanian speech is rather a stage than a form of language," and seems to be the earliest mould into which human discourse naturally, and as it were spontaneously, throws itself; being simpler, ruder, coarser, and far less elaborate than the later developments of Semitism and Aryanism. The Aryan, or inflectional stage, would thus be the necessary result of a higher phase of mind and civilisation, and the consequent refinement and more perfect development of language, and of the elimination of all rude Turanian forms,—the agglutinative ripening ultimately into the inflectional.

The similarity in grammatical processes, visible in Sanscrit, Greek, Latin, and other so-called languages of Aryan origin, is not the result of derivation from an original Aryan source, but is the result of the independent development of language among the higher races of mankind, call them Aryan, Indo-European, Caucasian, or what you will, ultimately leading to the formation of a more complete grammatical construction, the necessary product of a mind of superior development. For a mind of more perfect organisation, operating on language, will work out and form a similar grammatical construction independently

of other similar minds in other countries;* like the young Pascal, who, it is told, worked out the first propositions of Euclid without any previous knowledge of that author. A writer in the *Quarterly Review* confirms this view; his words are, "Unless in cases of the most minute or complex coincidence, we should shrink from using abstract similarity of grammatical processes alone as proof of common descent in two languages. Thus the ancient Mexican is capable of putting together the words *chua* (*tl*, leather), and *amatl* paper, so as to describe parchment as *chuamatl*, or leather-paper; now we use precisely the same mode of compounding words, but no one would say that the occurrence of this same grammatical process in Aztec and English is any proof of hereditary connection between them. This is a very elementary case, but the same view applies to more complex forms,—for instance, to the appearance in two languages of the practice of forming persons of a verb by affixing to its root more or less mutilated personal pronouns. Such a process, when found both in Turkish and Sanscrit, can hardly be urged to prove anything but that mankind is apt to do the same thing under the same circumstances."

There is thus every reason to suppose that languages had an independent origin among different races, the perfection they attained to being dependent on the greater or less refinement of organisation of the race amongst which a language originated. A natural instinct working uniformly among races widely diverse will produce those forms of language peculiar to their stage of development in civilisation and intellect; the Turanian, or agglutinative, was the offspring of a rude, coarse civilisation and an inferior grade of mind, the Aryan or inflectional, the product of a higher civilisation and a more refined intellect. An analogous hieroglyphic alphabet has been worked out independently by the Egyptians and the Mayas of Yucatan; why may not an inflectional stage of language be also evolved independently?

In America we have certain evidence of the independent growth of languages. The two civilisations of Mexico and Peru were developed

* Humboldt gives an instance of the independent development of the same grammatical construction in three countries most remote from one another, Greenland, Biscay, Congo. His words are,—“In the Greenland language, the multiplicity of the pronouns governed by the verb produces twenty-seven forms for every tense of the Indicative mood. It is surprising to find, among nations now ranking in the lowest degree of civilisation this desire of graduating the relations of time,—this superabundance of modifications introduced into the verb, to characterise the object. *Matarpa*, he takes it away; *mattarpet*, thou takest it away; *mattarpatit*, he takes it away from thee; *mattarpagit*, I take it away from thee: and in the preterite of the same verb, *mattara*, he has taken it away; *mattararit*, he has taken it away from thee. This example, from the Greenland language, shows how the governed and the personal pronouns form one compound, in the American languages, with the root of the verb. These slight differences in the form of the verb, according to the nature of the pronouns governed by it, is found in the Old World only, in the Biscayan and Congo languages. Strange conformity in the structure of languages, on spots so distant, and among three races of men so different,—the white Catalonians, the black Congos, and the copper-coloured Americans!” This conformity of grammatical construction is evidently the result of a similar phase of mind in the three countries.

in separate and independent lines, without any trace of any connection between each other; their languages were also formed and developed in successive stages of unconnected and independent growth.

Further, the peculiar synthetic structure by which every dialect of America appears to have been fashioned, from the land of the Esquimaux to Tierra del Fuego; a system which, bringing the greatest number of ideas within the smallest possible compass, condenses whole sentences into a single word; and its total dissimilarity with every idiom of the Old World may be considered as a most convincing proof of the independent development of language in the New World.

In America we also find a witness of the first stage of language in the Otomi tongue, which, in its monosyllabic composition shows a very singular affinity to the Chinese.

Language, too, like every thing that has growth and progress, has its cycle of development; when it reaches its highest point of perfection it exhibits the invariable tendency to decline, it passes through its stages of decay and dissolution.

Many languages have run through their cycle of development: Sanscrit, Pehlevi, Egyptian, Chaldee, Hebrew, Greek, Latin, have all had their rise, progress, maturity, decline, decay; have passed away and have become things of the past. Other languages have become utterly extinct, like some races of men, leaving not a trace behind.

Mr. PIKE opened the discussion on the two papers. He said that some time ago he had read a paper on the same subject as Mr. Westropp's, and the conclusions at which he arrived were the same, so far as they differed from those of Professor Max Müller. It was at that time maintained that in the origin of words abstract terms were first used, and in his paper he showed that that could not have been. The theory against which he had protested was no longer put forward, and he was glad that Mr. Westropp, in his very able paper, agreed with the opinions which he (Mr. Pike) had then advanced. As to the paper by Dr. Charnock and Mr. Wake, it was an instance of dys-genetic hybridity. The two authors had put their heads together, and the product of their joint wisdom was puny and abortive. There were great differences manifest between the two parents of the paper. Dr. Charnock was a philologist of the old school, and attached undue value to the number of words in the vocabulary of different nations. Mr. Wake, on the other hand, was to be looked upon as an Anthropologist of the future, and he was surprised to find him in alliance with Dr. Charnock. No new facts were stated in the paper, and there was only one argument adduced,—a fact which might be explained by the manner in which the paper was got up. It was a lady's argument—it is so, because it is so. That was the only argument, if it might be so called. The question was stated to be one of probabilities—that is to say, it is probable that peoples speaking the same language are of similar races. But if they looked to Europe, he contended that there was no part in which similarity of language indicated similarity of race. In France, for example, the people of Normandy, of Auvergne, and of Provence spoke the same language, but it was manifest that they were of different races, if the word race meant anything. This

point had been established beyond all doubt by Dr. Broca. It was the same in different parts of Germany, of Italy, and in Spain. Every one of the examples brought forward in the paper was an exception to the rule which the authors wished to prove. As to the question of comparative grammar, he referred to his paper entitled "What is a Teuton?" in the *Anthropological Review*. He believed that it was now generally admitted that a grammar could be hybrid. If a grammar could not be hybrid, it would contradict one of the best known laws of the association of ideas. Viewing the paper as a whole, it appeared to him to contain neither facts nor arguments, and that the views expressed in it ought to be abandoned.

Mr. A. L. LEWIS observed, that the authors, while admitting that various peoples had changed their language during the historic periods, ascribed these changes to special causes, but, as no one knew whether similar causes might not have taken effect during the pre-historic period, he thought too much importance should not be attached to language as a test of race. The authors had remarked, with respect to the negroes of the West Indies, who spoke Indo-European languages, that if a race resembling the Indo-Europeans had existed under similar circumstances, they would have accepted the language as proof of a racial connection; but in this case it was known that there was no racial connection, and he thought this knowledge should make them more cautions in other and more doubtful cases. He thought Mr. Hodder Westropp's paper was fairly argued from the premises, but he objected to those premises; he was not prepared to admit that the human race was brought into existence mute, and that language had been developed from emotional interjections.

The Rev. DUNBAR HEATH thought that Mr. Westropp's paper was very valuable in its statement of the fundamental truth, that there is an important difference between the emotional and the rational. All animals, he believed, had a language intelligible among themselves, which was emotional; but there was a great difference between emotion and thought, and they should endeavour to trace the growth from emotional into rational language. In his opinion it might be traced, and thus an ape might be gradually trained in the struggle for existence to express a thought. He illustrated the difference between emotional and rational language in this manner. A dog, in calling to her puppy to come to her used emotional language, which the puppy understood; but if the dog told the puppy to go into the next room to find more food behind the door, and it could understand, that would be rational language. His impression was that language, to some extent rational, might thus be traced in animals. With respect to the other paper, the subject treated of was a large one, and was different from the first; he thought it was probable that language might be a test of race, but that was all. He thought before any satisfactory answer could be given to the question, whether language were a test of race, they should determine, in the first place, in what sense the term race was used. "Race" was an indefinite word, as applied to modern peoples, but if they went so far back as the Turanian, Semitic, and Aryan races, which had well-marked distinctions, he thought that

in those cases language might be considered a test of race. It was, however, all a question of degree; in certain divisions of mankind, where the distinctions between them were well defined, language might be a test of these distinctions, but when they came to minor divisions the people were, in many respects, similar, and they could not be called different races. He maintained that both race and language were questions of degree, and that one mingled with the other. With regard to the question whether grammar can be composite, he thought it could be, as Mr. Pike had shown.

Mr. WAKE, in reply, said that the paper which he had contributed in connection with Dr. Charnock, was read before the Society for the sake of discussion. If it was meagre of argument it was because the affirmative of the question was, as a rule, so evidently true; it was clear that persons closely related must speak the same language and the presumption therefore is that peoples speaking the same language are related. Without doubt, when applied to the great divisions of mankind, language is a test of race, and in most cases it must be so when applied to the several subdivisions. Language is not asserted to be an *absolute* test of race, but it is a better one than any other, except perhaps in cases where there has been great admixture of peoples as in Europe. Mr. Wake adduced the gipsies as a remarkable instance of the indication of race by language; it was for a long time uncertain where they originally came from, but it had been determined by an examination of their language that they were natives of India. Examination of the language of the people of Madagascar would prove them to be closely related to the peoples of South Africa, language in this case being a valuable test of race.

The Meeting then adjourned to December 1st.

DECEMBER 1ST, 1868.

SIR DUNCAN GIBB, BART., V.P., IN THE CHAIR.

THE minutes of the previous meeting were read and confirmed.

The following were elected—

Fellow.—F. G. H. Price, Esq., 12, Upper Berkeley Street, Portman Square.

Corresponding Member.—M. Le Hon, Chev. Ord. Leop., Memb. Geol. Soc. France, etc., Brussels.

The following presents were then announced, and thanks were voted to the donors, with a special vote to Dr. Paul Broca and the Minister of Public Instruction.

FOR THE MUSEUM.

From the ANTHROPOLOGICAL SOCIETY OF PARIS, through the French MINISTER OF PUBLIC INSTRUCTION—Casts of three Human Skulls, two Lower Jaws, six Long Bones, one Collar of Shells, fifteen Flints, derived from the Station of Les Eyzies, department of Dordogne, France.

FOR THE LIBRARY.

From the AUTHOR—On Vegetable Products used by American Indians:
Robert Brown, Esq.

From the LIBRARY—Tenth Annual Report of the Public Free Library
of Manchester.

The following paper was then read :—

On the Claims of Women to Political Power. By LUKE OWEN PIKE,
Esq., M.A., F.A.S.L.

It is no uncommon event to hear the question,—What is the aim of Anthropology? To that question I do not presume to attempt any complete answer in the present paper; but I hold that the science, in order to be worthy of the name, must deal with practical as well as speculative difficulties, and I know of no subject upon which it ought to give a more authoritative decision than upon the claims of women to political power. Let it not be supposed that I wish to trespass on the domain of the statesman; he is the judge of times and seasons, of present expediency or in expediency, with which the mere anthropologist has no concern; but if the science of mankind is unable to throw some light upon the proper relative position of the two sexes in matters of government, there can be but little hope that it will ever fulfil the expectations of its votaries.

There is an impression on the mind of the public, that “philosophers” desire to see women on a footing of complete political equality with men; and there is also a tendency to confound the “philosopher” with the man of science. Unless, therefore, a protest is raised in time, it is by no means improbable that the anthropologist will be confounded with the metaphysician. Much has been said about the abstract right of every human being, and therefore of every woman, to a vote. I need hardly remark that such an expression as the “abstract right of woman” is quite meaningless to the scientific student of mankind. He knows that a right in the abstract is often only a synonym for a wrong in the concrete; he detects in the very use of the word “right” an *à priori* assumption instead of an inductive generalisation; he recognises in the use of the word “abstract” a favourite resource of loose reasoners; and he suspects that the inventor of the whole phrase would shrink from a definition of “woman”. But to the eye of the public, the self-elected champion of feminine virility is an anthropologist, until anthropologists disavow his opinions.

I do not, of course, propose to discuss the matter on the ground of abstract right; but women are encouraged to enter upon active political life by those who appear, at first sight, to bring forward arguments of a wholly different character; and what I hope to prove, is that all these specious arguments are in reality only metaphysical; that they had their origin, in one form or other, long before man had conceived his present ideas of science, and that they show a deficient insight into the laws of nature. But I must, at the same time, admit that some of the advocates for this sexual revolution have done good service in bringing prominently forward the great problem which under-

lies the whole dispute,—how to secure the greatest happiness of the two sexes in civilised life. And this problem I shall hold in view throughout my paper, though I cannot for a moment pretend to solve it.

There are few educated men who have not heard of the Malthusian doctrine, that the increase of population, in long-inhabited countries, is too rapid, and ought to be checked.* There are also probably few in ignorance of the fact that the same opinion is held by living men of eminence, who maintain that they have discovered the exact limit of permissible procreation, and would restrict every human couple to a family of two children. I believe I am correct in stating that, although the end is pronounced desirable in works of high character and reputation, there is no further rule of conduct given, except in books published in Holywell Street, or its neighbourhood. In short, the philosopher, after having uttered his dictum, ceases to be a guide or a friend, and leaves his followers to unnatural celibacy, to their own devices, or to the quack doctor. But what, it may be said, has all this to do with the political claims of women? Just this much: the political claims of women are associated, and always must be associated, with an attempt to make human nature something different from what it is, with an attempt not to untie the knot, but to cut it,—to adapt not human laws and customs to the laws of nature, but the laws of nature to a philosophical panacea. It is an attempt which has been made again and again in the history of the world, which has always failed, and which, if there be any truth in science, must always fail hereafter. It is an attempt to deprive woman of her motherhood.

Philosophers of the present day—to whom freedom of thought is often imputed as a crime—have, perhaps, never paused to consider that, although their motives and their means are different, their end is precisely that which was aimed at by the early Christians. The extremes of enthusiasm, like other extremes, frequently meet. It is impossible to conceive minds cast in more different moulds than those of Tertullian and Origen on the one hand, and those of Malthus and his disciples on the other. Yet, all alike have made war upon nature; the one party in the name of religion, the other party in the name of reason. And though all must command respect from their earnestness and sincerity, I must confess that I have a higher respect for some of those ancient Christians, than for some of these modern philosophers. The former were, at least, free from that arrogance which is the enemy of all patient thought; and if they recognised a power higher than nature, they did not believe that power to reside in themselves. They, in the wildness of fanaticism, proclaimed the touch of woman to be pollution; they shut her up in a monastery; they assigned her a dark corner in their houses of worship: they even mutilated themselves to escape temptation; but there was not a little of sublimity in their folly, and they never went so far beyond the point where sublimity ends, as to imagine that a woman could be converted into a man. We may smile at their sober treatises on the “Veiling of Virgins,” at the instructions given to women for the conceal-

* Malthus on Population: see especially book iv, c. i.

ment of their charms, at the fences drawn round men to exclude the shafts of desire ; but in all this there is nothing so unscientific, or so opposed to healthy sentiment, as the efforts of modern androgynists to unsex a sex.

It is well known that in the monasteries folly degenerated into foulness, that the ecclesiastics, who saw no prospect of their own justification by their works, enlarged the doctrine of justification by faith, and that at last the veiling of virgins became another name for the veiling of vice. Man, in attempting to expel nature on the impulse of fanaticism, illustrated on a grand scale the maxim of the Roman poet,—

“Naturam expellas furca, tamen usque recurret,”

and Nature, like human beings, does not return from exile in a better mood. Everyone who is acquainted with the writings of mediæval authors knows how at length many tribes of barbarians overspread the greater part of the Roman empire, and, while they adopted, gave a new life to the vile practices which the Roman priest had inherited from the pagan. In those days there were no morals, little government, and a splendid religion. A great experiment had been tried, and had failed. Men had no principles to guide them, and little faith, save in their confessors. The strongest and the richest could secure the largest share, not only of lands, of wine, and of women, but of heaven itself ; and Europe had all of barbarism, except its simplicity.

Such was the end of a great sexual revolution, which began in all honesty of purpose, but which was opposed in principle to the natural laws of humanity. In the early days of Christianity, the great sexual problem was demanding solution, just as it demands solution now. There existed, even then, immense disparities of social life ; there were men who could afford to keep as many wives or mistresses as they pleased ; there were others who hardly knew how to support themselves. As the new religion spread,—as it proclaimed itself to be the religion of the poor,—as it was accepted by the ignorant,—it is not very strange that the words of its founders were misinterpreted, and that the needy consoled themselves for their misery by denouncing indulgence as a crime. The indigent, whose flesh was mortified, not from choice but from necessity, began to regard their poverty as a virtue. They supposed that they were doing God's will in the abandonment of all domestic ties, and as their creed spread upwards, their unnatural ideas of morality spread with it, until at last it was considered the duty of a Christian to make not the best but the worst of humanity in this life. All who had a lively faith, considered that they could best fulfil their duty by retiring from the world ; monasteries were built in every part of Christendom ; and then a truly Utopian scheme was tried on a grand scale,—with what success is now but too well known.

This was the Utopia of ignorance. But we are now threatened with the Utopia of enlightenment, which, if it were possible, would probably extinguish all happiness for ever. Woman is no longer to be put out of sight as an unclean animal, which should be ashamed of its own existence ; but she is to have a position assigned her which is

hardly less insulting to her womanhood. Instead of confessing that to be feminine is to be foul, she is encouraged to believe that the masculine is her true model. She is told that she has been feminine too long; but she is assured that, with the assistance of legislation, she may succeed in repairing the monstrous defect. The male school-master will restore her mind to its naturally masculine tone. The physician, perhaps, is ready with some device which shall rescue her from the indignity of bearing children, or at least of bearing too many. She is to be treated in almost all respects as Plato would have treated her, but with one well-marked exception. He wished to exhibit her naked among naked men in the public gymnasium; her modern panegyrists wish her no less to forget her sex, but to forget it by concealment even from herself.

It is not improbable that the present remarkable phase in woman's history may have made its appearance, partly at least, through reaction against the very common opinion that the male is the superior sex. This idea, offensive as it is to all feminine sentiment, receives its best illustration in the old fable, according to which various parts of the body, each being necessary to the rest, each put in a claim to superiority. The truth is that in the sexes, as in the members, there is neither superiority nor inferiority; but it does not therefore follow, as has been hastily assumed, that there is equality. No two things can be pronounced equal or unequal, superior or inferior, unless there is some common standard by which they can be measured. The colour *blue* is not equal nor inferior, nor superior to the colour *yellow*; and the *green*, which is produced by the mixture of the two, owes no more to one than to the other. In the same way, humanity is perpetuated by the coexistence of male and female; and if the functions of either one sex or other were radically changed or perverted, humanity itself would cease to exist.

I trust that I shall not be thought to have wandered away from the subject in making these apparently general remarks. The most vital point in my argument is that woman must be regarded as woman, not as a nondescript animal, with a greater or less capacity for assimilation to man. The question, regarded from a scientific point of view, is not how far the female intellect can be trained to imitate the male; but what it may be shown to be from observation, or inferred to be from correlations of physical structure. The argument, from observation, which would be considered sufficient by most men of science, is controverted on the ground that human laws have been stronger than the laws of nature. It is said that man has oppressed woman by his superior muscular power, and has impeded the natural development of her intellect. If this be true, and if mere strength of body can thus get the better of mind, it is certainly strange that horses and elephants have not become the masters of men; and hardly less strange that the stalwart Negro should long have been the slave of the more intellectual, but not more muscular, white man. But as it is useless to prove the relations which have existed, to those who preach of relations which ought to exist, between the two sexes, it becomes necessary to investigate the matter from the point of view of physical structure and its correlated functions.

Among other and better known features distinguishing the female sex from the male, are the smallness of the braincase, the width of the pelvis, and the tendency to deposit adipose tissue, rather than muscular fibre. To the rule, of course, there are exceptions; there are masculine women just as there are effeminate men, and those exceptions I propose to consider before concluding, but they ought not to affect the broad general treatment of the subject. To these and other differences of structure, correspond numerous differences of function. Both the capacity and the desire for muscular exertion are less in the female than in the male; the strength of the system develops itself in another direction. So also the desire, if not the capacity, for the prolonged study of abstruse subjects, is less in the female than in the male; and mental activity pursues another course. It does not follow, that because a man can lift a greater weight on the average than a woman, he is therefore her superior, any more than that he is her inferior because she can bear children and he cannot. Nor is woman man's inferior because she has never devised a system of philosophy, any more than she is his superior because he lacks all her wealth of maternal tenderness, and some of her ready powers of expression.

Much has been said of the difference of weight in the male and female brain; and it has been argued that the female intellect must, for that reason, be necessarily inferior to the male. But apart from the difficulty of finding a common measure for the two, there is great uncertainty concerning the relation of mental activity to the contents of the skull. The average stature of women is less than that of men; and therefore the absolute difference of weight cannot be a fact of any value, unless the various mental functions are localised. He would be a very bold man who ventured to pronounce that the brain has no influence over the muscles of voluntary motion, or even over those which are beyond the control of volition. And when inferior stature is found in combination with less development of the muscular system, who can say how far these conditions may be the correlates of some condition of the brain? It may be, and probably is, true that the brain is intimately connected with intellectual and emotional manifestations; but it is probably no less true that the brain is connected with all manifestations of volition; and until we have determined the relative position and the quantity of cerebral matter necessary for combined muscular movements, we have no means of determining the quantity or the position of that which is necessary for thought and feeling. I am aware that many attempts to localise the various functions have already been made; but the mere fact that the various inquirers and experimenters have arrived at various and contradictory conclusions, is in itself enough to prove that the contents of the skull have not yet been correctly mapped.

Women of all nations are, I believe, generally considered to possess not only more emotional characters, but greater powers of observation than men. If this be true, it follows, I think, that their senses must be more strongly developed than those of the male sex, and that their memories must be equally if not more retentive. It matters little that the objects which they observe are not the objects observed

by men. It is as great an effort for the eyes and mind to see and remember all the colours and all the forms in a room full of human beings, as to define the position of the earth's strata, and assign every fossil to its place. But women, on the average, prefer millinery to geology, and men, on the average, applaud the preference. The matters with which attention is occupied must, to a great extent, depend upon the bodily capabilities of each individual. The man who has lost his limbs cannot scale mountains, and the blind man cannot paint; but the energies of either may flow in a direction suitable to his circumstances, and each may distinguish himself in some field of thought. And so, although woman may be more at home in the drawing-room or the nursery, than in the field of battle or the seventh heaven of metaphysics, her walk in life may exhibit qualities as high, and energies as well directed, as those of the chemist, the engineer, the philologist, or even the philosopher. Nothing can be more ungenerous than to flout her with her domestic cares, or to depreciate her efforts to please. If her form is more susceptible of adornment than man's, it is but natural that she should be more anxious to adorn it. If it is a privilege of her organisation that she can become a mother, the wish to deprive her of it is not consistent with the teachings of science, with manliness of character, or with common sense. If her maternity forces upon her the consideration of minute details which are unobserved by men, or have no interest for them, the tendencies of her mind are not a fit subject for detraction, unless that detraction be intended, as it commonly is, for maternity itself.

The elements of the female mind (to regard the mind alone, for a moment) are probably, as the champions of women's rights assert, identical with those of the male; and the inference which some persons would draw is that the mind itself ought not to be different. No one would seriously deny that woman possesses emotions, will, senses, and intellect; or that man's mind is susceptible of precisely the same division. It does not, however, require even a knowledge of chemistry to discover that combinations of the same elements, in different proportions, will produce compounds of different qualities. But chemistry, perhaps, illustrates the subject better than any other science. Not only may the same elements, mingled in different quantities, produce substances of different properties; but the same elements, even in the same proportions, may, under different circumstances, yield dissimilar products. Not only do the ethers differ from the alcohols, and each alcohol and each ether from its namesake, though all are compounded of carbon, hydrogen, and oxygen in different proportions; but alanine and sarcosine—which are both compounded of carbon, hydrogen, nitrogen, and oxygen in exactly the same proportions—have properties entirely different from each other. If, therefore, it could be shown that the male and female minds are, in the language of chemistry, isomeric, it would not follow, according to any natural law, that they should be identical in character; still less if they merely possess the same elements without being isomeric. And it would surely be not more unscientific to preach the conversion

of all ether into alcohol, and all sarcosine into alanine, than to insist that the feminine mind should undertake all the functions of the male.

While the senses, and the faculty of retaining impressions, are as strong in women as in men, and perhaps stronger, it will hardly be denied that in all ages and in all climates women are and have been more prone to the display of emotion than of pure reason. Rachel weeping for her children, Sappho burning with desire, Iphigenia grieving not to die, but to die unwedded, Aspasia brilliant with wit and cruel in hate, the girl who, as Horace says, lied gloriously to save her lover, the woman prodigal of her ointment upon the Saviour's head, Cleopatra, too proud to live when she could not captivate her conqueror, are immortal types of what is good and what may be bad in feminine nature. It is not out of such qualities that statesmanship can be developed or science advanced; but science and statesmanship are not the only good things in the world, and the world may enjoy enough of them without calling in the assistance of women. If man's highest prerogative is to think, woman's noblest function is to love; and this assertion is not a metaphysical dogma, nor even a generalisation from the history of mankind, but is an inference from the relative position of the sexes throughout the whole of that class of animals to which mankind belongs. The maternal instinct, as it is commonly called, is shared by the females of all the mammalia, from the tigress to the gorilla, and is not, as might be inferred from certain teachings, the sad consequence of iniquitous legislation. The skull of the female gorilla differs from the skull of the male, just as the skull of the woman differs from the skull of the man. And this difference has not been caused by centuries of oppression; it merely gives evidence of the healthy operation of that natural law by which structure corresponds more or less to function. In some respects the skull of the female gorilla is more human in its form than that of the male; and so, also, in some respects the skull of the woman exhibits, in a more striking manner, the attributes of humanity than that of the man. Nor are these skull differences restricted to a few species; they extend throughout almost the whole of the vertebrate family; they are accompanied by differences of muscular development, which are no less constant; and the whole of these physical differences are correlated with a psychical difference which is indisputable,—the greater pugnacity of the male as compared with the female. Considered, then, apart from individual peculiarities, the diversities of male and female capacities may be seen to have arisen from the widespread action of natural laws, and are not to be annihilated by a merely human decree. It is not the fault of the male human being that he possesses more than the female, of that combativeness which is necessary not only in political life, but even in the ordinary struggles for existence. It is his privilege to protect, and hers to be protected.

It may be suspected that the advocates of a sexual revolution have been unfortunate in their experience of the sex opposed to their own. There is no doubt that, century after century, women have shown a preference for men possessing the qualities which seemed to them dis-

inctively masculine ; and that men have wished their wives to possess the virtues which are considered distinctively feminine. In other words the intellect of either sex has found pleasure in association with something dissimilar to itself, not because one is better or worse than the other, but simply because the two are different. There is no more reason for the assertion that a woman's brain is an undeveloped man's which requires cultivation, than for the assertion that a man's pelvis is an undeveloped woman's which requires to be expanded, or that some of his muscles should be converted into fat. To him it is not, as a rule, given to express himself so rapidly as a woman ; to her it is not, as a rule, given to think so deeply as a man. But she often sees what is lost to him during a fit of abstraction ; and he is often indebted to her for the materials upon which his reflection may work. Genius, it has often been said, is of both sexes at once ; and the saying well indicates the true relation of the male and female intellects. Each has powers and beauties of its own ; each may profit by contact with the other, and it is not until some resemblance to a combination of the two has been effected that men recognise that highest mental development to which they give the name of genius.

There are few subjects interesting to man in which clever women do not sometimes also take an interest ; and from this fact it has been hastily inferred that women might, with profit, devote the same attention as men to any and every branch of study. Such an inference leaves out of sight the fact that women rarely look at any subject from the same point of view as men ; their opinions often have the value which is to be found in the observations of an intelligent spectator when persons, whose whole attention is absorbed in any pursuit, fail to perceive what most concerns them. The best critic is not always a good author or composer ; and excellent suggestions are frequently made by those who are not fitted by nature to carry their own ideas into operation. This is especially the case with women, who if they were to devote their whole energies to science or to politics, would do violence to their physical organisation. The prolonged effort which is necessary in order to work out any great scheme, to make any great discovery, to colligate any vast mass of materials by a great generalisation is a heavier strain on the vital powers than any merely physical exertion. It is, like military service, inconsistent with that bodily constitution which is adapted to maternity, and all that maternity implies ; nor does it seem possible that by any process of selection, either natural or human, this difficulty can be overcome. The change in woman's nature must (if effected at all) be effected either in one generation or more ; if in one, humanity must immediately cease to exist ; if in more, humanity would only be extinguished by degrees ; but the diversion of woman's vital powers from the course which they take by nature is neither more nor less than the abolition of motherhood. And this, either wholly or in part, either directly or indirectly, is what some earnest men are preaching in the name of sexual equality.

The modern attempts to deprive woman of her womanliness belong to the metaphysical school of thought, as much as any dogma of a mediæval schoolman. They start from the assumption that living

women either conform, or should be forced to conform, to some *a priori* definition of woman, evolved from the inner consciousness of a human being. They ignore all the ascertained facts of anatomy and physiology. They are directed not towards the perfection of womanhood in all its functions, but towards the transformation of woman into something different. They suggest not the study of natural laws, nor the observation of facts in nature, but the worthlessness of all facts, and all laws in comparison with a *dictum* issued from the study. It is not wonderful that ignorant enthusiasts should have placed woman in a false position through their inability to comprehend their own religion, but it is perhaps the strangest feature of the nineteenth century that thousands of persons advocate a still more unnatural revolution of the sexes in blind obedience to a purely metaphysical proposition.

The stages into which Auguste Comte divided the progress of human thought are admirably illustrated by modern attempts to alter the position of woman. Seventeen hundred years ago she was a stumbling-block in the way of the religious enthusiasts; to the metaphysicians of to-day she is no more than an abstraction. The early fathers of the Christian Church regarded her physically as a temptation to sin; some modern philanthropists regard her intellectually as the equal of man. It is possible that there may be truth in both opinions, but it is certain that the whole truth is not to be found in either. The religious doctrine is intelligible enough at first sight, but the metaphysical doctrine takes us back to the middle ages, to the conflict between the realists and the nominalists, to the verbal quibbling in which great minds, for want of better occupation, frequently expended all their energies. The woman for whom a vote is demanded is not, when carefully inspected, a woman of flesh and blood, but an abstract or archetypal idea for which the realists of the nineteenth century claim a positive existence. The process by which such ideas were arrived at in former times, and by which, in all probability, they are arrived at now, is of the following character.—Men and women possess certain attributes, or a certain attribute, in common, and to this attribute, or to these attributes collectively, may be given the name of humanity. All points of difference are by the very nature of the process disregarded, or drawn off, or in technical language *abstracted*; or rather the point of resemblance is *abstracted* from the point of difference. Now when humanity and similar abstract terms had been thus invented by men who perceived their value as a species of mental shorthand, they were invested with a substantial existence by Plato and many of his mediæval followers. The “humanity” which is reached by this mental operation is, of course, divested of sex along with all other differences. If the human beings who are actually born into the world could in reality, or even in imagination, be made to conform to this sexless archetype, there could be no objection to voters on the score of sex. Thus much may be safely admitted; but it would then be in the power of any human being to coin such a word as “mammality,” or “animality,” or to make use of the old word “entity,” to assert the existence of a substance corresponding to each word, and so to destroy not only the distinction between man and brute, but between organic

and inorganic matter. In short, the very same argument which would introduce woman to man's occupations on the ground of her humanity, would introduce whales on the ground of their mammality, or stocks and stones on the ground of their entity.

I trust that I shall not be considered guilty of any disrespect in reducing some well known arguments of some justly influential thinkers *ad absurdum*. I no more mean to show disrespect by my treatment of the subject, than to deny the sincere philanthropy of many who advocate woman's rights, when I say that it savours not a little of priestcraft. Just as the metaphysical stage of thought bears a great resemblance to the religious, so the attempt to carry a philosophical doctrine into execution is by no means unlike the attempt to impose a creed. Every ideal form of government which has hitherto been conceived has had innumerable elements in common with the church of the middle ages. From the time of Plato to our own, philosophers have always presented themselves upon the domestic hearth to dictate the relations between husband and wife; all who are acquainted with the early books of penance will remember that the priest took upon himself the same office even to the minutest details. In all the mediæval works which touch upon science it will be found that the final authority upon every controverted point is not the evidence which may be discovered, but the doctrine of the church; so neither Plato nor Malthus, nor the followers of either, appeal fairly to physiological facts or laws, but would repress the very instincts of human nature wherever they are opposed to the philosophical idea.

The apostles of all religious and all metaphysical doctrines have commonly been not only energetic but thoroughly honest men. They would direct all thought and all action into the groove worn by their own minds, not from an innate love of tyranny, but from an enthusiasm which cannot admit the possibility that persons of a different opinion may be in the right. In the apostle there is always much to admire, but it happens only too often that his priestly successor inherits his faults without his virtues. The present may be called the apostolic age of the doctrine of equal humanity; and many followers will be won through respect for the character of the apostles, rather than from conviction after sober consideration. But to the student who desires something positive in science, and who would use that science for the benefit of mankind, there is sad discouragement in the spectacle of a new intellectual crusade for an idea. To this there are only two possible issues—on the one hand, complete failure; on the other hand, government by a metaphysical priesthood which will not even spare sex in its efforts to crush out all individual pre-eminence.

It may, perhaps, be thought that the Anthropologist who endeavours to assign woman her true position according to the laws of nature is practically not less tyrannical towards her than the reformer who would have her modelled according to rules of his own. There are, however, two most important distinctions to be borne in mind; in the first place, the man of science knows from observation and experience that when structure is healthily developed, and function of every kind unimpeded, there results the nearest approach to happiness of which

any individual is capable. But the Utopian of the *à priori* school gives no pledge for happiness except a general proposition, or a series of general propositions, well enough suited to the days of Plato, but wholly without value in the days of Darwin. In the second place, the propounders of new schemes make no provision for exceptional cases, but would reduce all mankind to one dead level, while variation is admitted, and the efforts of remarkable individuals are watched with interest by the observers of nature. The latter, conscious that they are not yet masters of the universe, would allow fair play to all alike in the hope of learning something new; the former, tacitly assuming that the apex of knowledge is reached, would issue edicts, from their metaphysical Olympus, for the reconstruction of humanity.

There cannot be a doubt that human beings exist who, though not of the male sex, have more masculine intellects than many men, and others whose muscular development and power of enduring fatigue are far superior to those of many a conscript. Had conquerors possessed Utopian minds, they would long ago have declared the fitness of women for military service, for which they are adapted just as well as for political life. But it is only in such a work as the Republic of Plato that we find a plea for the application of the same physical training to both sexes. In that treatise* an objector is made to suggest that the spectators would begin to laugh if men and women were seen struggling together in the same arena. The philosopher whose ideal republic would have possessed a hermaphroditic army, could not see the point of the joke, and expressed a profound contempt for the sneers of the unphilosophic. It is, however, worthy of remark that although he would gladly have seen women converted into wrestlers, boxers, and soldiers, and even thought of giving them a share in the government of the state, he declared them to be in all things weaker than man. The idea of absolute equality is of quite modern growth, and has probably been suggested by the undeniable success of the female intellect in many fields of literature.

To write ingenious novels, and even successful dramas, to paint from nature, to interpret the works of the greatest musical composers, to act with taste and discrimination—all these and a thousand similar accomplishments, each requiring an effort of intellect, are now within the range of women who are no more exceptional than the front rank of men in every generation. Such distinctions may be attained by women who lose none of the charms of womanhood; and even a knowledge of the latest discoveries in science is in no way incompatible with any of the feminine graces. But a little consideration will lead to the conclusion that all this mental activity is but the evidence of human progress in general, and that its root, as well as its most perfect development, is to be found in the domestic life. Long before the invention of printing, mothers amused their children with nursery tales, lulled them to sleep with songs, and imparted to them the rudiments of such knowledge as the world possessed; maidens and wives could act well enough to deceive husbands or attract lovers in the

* Book v, cc. iii to vi; see, also, the "Laws," book vi, c. xxiii.

days of Homer or even of the patriarchs. And many of those beautiful poetical stories which constitute the mythology of all imperfectly civilised nations bear the stamp of woman's imagination, and have often been narrated to excite or to soothe the terrors of the young.

Women, however, with intellects truly masculine, are, and have always been, even more rare than women with a masculine development of muscles. There are few, if any, distinctively masculine pursuits in which any women have ever succeeded; there is no great law of nature, no great mechanical invention, no great legal code, nor even any great metaphysical system of which any woman can say, "of this the world owes the knowledge to me." A reason for this fact is to be discovered not in the inferior quality of the feminine mind, but in the character of the objects to which woman's physical organisation naturally directs her attention. The practice of medicine, which is now becoming recognised as a feminine occupation in America, suggests at once that instinct for nursing, which every one admits to be the special gift of woman, and which is, in fact, a correlate of her power to become a mother. In short, if there be any truth in science, the intellect of woman not only has but must have, a certain relation to her structure; and if it could be shown that there exists no difference between the male and female minds, there would be an end of Anthropology. But the directions in which clever women have developed their mental activity afford the best possible illustrations of the scientific view of woman's position, and show how the long-inherited instinct matures itself according to the truly feminine type. All the different lines, when traced back, converge through the nurse upon the mother.

It should not, however, be forgotten that there may be individual peculiarities of structure caused by circumstances either antecedent or subsequent to birth, that the constitution of society may impede the natural development of function, and that there may be a number of women in every age whose case demands special consideration. Though the births of males are slightly in excess of the births of females, the females in the prime of life exceed the males in number, and it follows, therefore, that even could every male afford to marry, there would still be some women husbandless. The difficulty which here meets us is only one among many of those which appear irremediable not only to statesmen, but to men of science; it is no more probable that the body social will ever be so constituted as to secure the happiness of every individual, than that the human frame will cease to be subject to disease. There is indeed no doubt that the science of health and the science of politics are closely allied, and that each must be imperfect without the other. The end of both is the extinction of mental and bodily pain, but that end seems to be unattainable. Anatomists and physiologists know only too well that had freedom from disorder been the object with which our organs are constructed, the means would have been lamentably ill adapted to the end, that every malady is easily induced and with difficulty checked, and that the greater part of mankind start in the career of life with some inherited weakness. It is true that much has been done towards the mitigation of epidemic diseases, and it is possible that something may be done towards the

alleviation of social grievances ; but the success which has been achieved in one case affords a very instructive lesson towards the mode of proceeding in the other. Epidemics have been deprived of their worst sting, not by any political theories, nor by a statement of human rights, nor by a definition of man or woman, nor by a refusal to consider our physical organisation, nor by any attempt to alter it, but by a careful study of the facts of nature, and by placing humanity, such as it is, in a more favourable condition towards the outer world, such as it is.

How the woman who cannot marry may be most favourably placed is a problem which can hardly be solved in general terms, and which must be answered according to the exigences of each particular case. But it may be safely asserted that the gift of votes to the whole female sex would not in any way improve the condition of old maids ; wherever keenness of observation and a retentive memory are of service, there is a good prospect of success for a cultivated female intellect. In proportion as the instincts of sex are suppressed, the range of acquisition may be widened. Woman naturally loves to teach the young, and when she is without husband, home, or children, she may well succeed in teaching more than children can learn. She naturally loves to tend the sick of her family, and when she is without family ties she may, perhaps with advantage, add a knowledge of medicine to her other gifts, and bring comfort to the bed-side of strangers. In short, she may exercise her feminine capacities in a more extended field of action than that of her own house ; but should she ever enter fairly into competition with men in all professions she will have ceased to be woman, though she will not have become man. The experiment, could it really be made on a small scale, would not be without its interest to the students of science, though from the conditions of the problem it could never be made to illustrate any theory of the origin of species. To the unwomanly woman it is a virtue to be childless.

A state with a hermaphroditic form of government, if even it could exist for a generation, is by nature doomed to extinction ; it may, however, be worth while to consider what kind of being a woman would become who should take an active part in the election of a representative. As an energetic member of his committee she would have to fight the battle, foot by foot, with his opponents of either sex ; she could not always sit at home and restrict herself to the use of a voting paper, because she would then tacitly admit her unfitness for political life with all its hard work and its turmoil of speech-making ; she would be like a foreigner giving a vote from a distance, without a knowledge of the qualities requisite for success in Parliament. It would be necessary for her to be thoroughly prepared for the fray—breeched instead of petticoated, with a voice hoarse from shouting, with her hair cropped close to her head, with her deltoid muscles developed at the expense of her bust, prepared with syllogisms instead of smiles, and more ready to plant a blow than to shed a tear. She hurries from her husbandless, childless hearth to make a speech on the hustings ; with hard biceps and harder elbows she forces her way through the election mob ; her powerful intellect fully appreciates all

the ribald jests and obscene gestures of the British "rough;" she knows the art of conciliating rude natures, and can exchange "chaff" with a foul-mouthed costermonger; or, if necessary, she can defend herself, and blacken the eye of a drunken bargee. She has learned all the catechism of politics, and when she mounts the platform she can glibly recite her duty to the world according to the side she has chosen. Experience has taught her the value of invectives, and she denounces her opponents with a choice selection of the strongest epithets; at first she speaks loud in a tone of contentment and self-satisfaction; she ends by losing her temper and bawling at the top of her voice. The crowd, never very indulgent, has no mind to respect a sex which makes no claim and has forfeited all right to forbearance. The hardened lines of her face are battered with apples, brick-bats, and rotten-eggs—the recognised weapons of political warfare. Perhaps the very place where she stands is the mark of a storming-party; and after enjoying the glory of an encounter with a prize-fighter (it may be of her own sex), she is at last brought to the ground by superior skill and strength. Then probably she retires to her home; but I, for one, had rather not follow her thither, or into that House of Parliament of which she is destined one day to become an ornament.

Such a description, I am aware, could only be applied to an electioneering woman in modern Britain, and not to an inhabitant of Utopia. In that, or some other republic of the future, not only is woman to be different but man also; the sexes are to lose their characteristic distinctions not simply by the conversion of woman into man, but by the partial conversion of man into woman. As soon as this sexual compromise has been effected by means not clearly described, the world will enjoy what enthusiastic heathens used to call the golden age, and what modern enthusiasts of another school now call the millennium. Envy, hatred, malice, and all uncharitableness will disappear; there will be neither wars nor rumours of wars, and an angelic population will know its own place and limit itself to its own number. Mankind will then have developed itself into a species of gigantic trade-union, in which women and their accomplices will infallibly be "rattened" if they create too much competition among men.

A state of society in which humanity shall no longer be human, in which not only sex but intellect and emotion shall have been remodelled, and the aspect of the outer world changed by a new and metaphysical cosmogony, is, like the doctrine of abstract right, beyond the grasp of the humble Anthropologist. His occupation will be gone as soon as that era shall commence. But until then, until murder, theft, and villany of every kind shall have been extinguished, until that struggle for existence, which pervades all nature and constitutes the only healthy check upon population, shall have been abolished, until every evil passion shall have been rooted out, he may perhaps be permitted to raise his feeble protest against innovations which would not only subvert man's civilised customs but contradict nature's first lessons. If statesmanship can amend the laws which press hard upon some unfortunate and exceptional women, if ingenuity can devise harmless occupations for mothers whom prosperity or adversity has deprived of

their maternal cares, in short, if any grievance can be met with a remedy which is not opposed to the teachings of science, every human being will have cause for gratitude. If men have met with women who prefer political to domestic life, and despise all conceptions but those which are purely mental, let them in the name of liberty cultivate their acquaintances; but let them also, in the name of liberty and in the name of nature, permit other men and other women to choose for themselves. If they have but little liking for women who are womanly, if they care nothing for the conversation and the tone of thought which are most in accordance with woman's voice, and mouth, and brain, if they are unable to realise that pleasure which either sex may derive from the sense of intellectual difference, let them by all means endeavour to gratify themselves, according to their own constitution, but let them not, Vandal-like, attempt to destroy those beauties which they do not appreciate.

The thanks of the Meeting having been voted to the Author, an interesting discussion followed, in which the Rev. Dunbar Heath, Mr. Villin, Consul Hutchinson, Mr. MacGrigor Allan, Dr. Langdon Down, Mr. Dendy, Mr. Alfred R. Wallace, and Mr. A. L. Lewis took part.

The Meeting then adjourned.

DECEMBER 15TH, 1868.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

THE minutes of the last meeting were read and confirmed.

The following presents were announced to have been received, and thanks were given to the donors:—

FOR THE LIBRARY.

From Dr. J. HUNT—An Essay on the Harmony of Language. The Quarterly Review, No. cviii, Sept. 1835. An Essay on the Means of Discovering the Sense of Words: Rev. J. P. Potter, M.A. Anecdotes of the English Language: S. Pegge, Esq., F.S.A. Philological Inquiries, in three parts, vol. I and II. Philosophical Arrangements. Three Treatises. Philosophical Inquiry concerning Language: James Harris, Esq. Inquiry into the Principles of Harmony in Language: W. Mitford, Esq.

From K. R. H. MACKENZIE, Esq.—Statuts de la Société Anthropologique de France.

From the AUTHOR—A Conjectural Solution of the Origin of the Classificatory System of Relationship: L. H. Morgan, Esq.

From J. FRASER, Esq.—Sketch of the Religious Sects of the Hindus: H. H. Wilson, Esq., LL.D. La Constitution Française.

From the AUTHORS—Extrait du Dictionnaire Encyclopédique des Sciences Médicales: Dally and Guillard.

From the SOCIETY—Proceedings of the Literary and Philosophical Society of Liverpool, Nos. 20, 21, and 22.

From the SOCIETY—*Journal of the Royal Asiatic Society of Bengal*, Part I, No. 1, 1868; Part II, No. 3, 1868.

From the SOCIETY—*Proceedings of the Philosophical Society, Glasgow*, 1867-8.

From the AUTHOR—*Natural History of Man, Africa*: Rev. J. G. Wood.

FOR THE MUSEUM.

From R. B. N. WALKER, Esq.—*Photographs of Girls of the Aku Tribe, Lagos, W. Africa. Photographs of Mandingos, Sierra Leone, W. Africa.*

From C. C. BLAKE, Esq.—*Two Pictures of Formosan Skulls.*

Sir DUNCAN GIBB read a paper "On the Character of the Voice in the Nations of Asia and Africa, contrasted with that in the Nations of Europe"; but before reading it he explained, with the aid of several large coloured diagrams, the different organs of the throat which contribute to the production of articulate speech, pointing out particularly the difference in the position of the ventricles in the throat of the Negro from their position in Europeans. He then proceeded to read the paper, of which the following is an abstract.

[*Abstract.*]

The subject was quite new, and difficult to handle from the comparatively few facts bearing upon it; the author, however, trusted to these and to his general experience in its elucidation. The voice of the Chinese and Japanese was of low power, feeble compass, and whining in its tone, possessing at times a sort of metallic twang. Among the natives of Tartary, Thibet, and Mongolia, the voice was stronger, louder, more powerful, yet still partaking of the metallic twang; the female voice was not inferior in power to that of the male sex; the metallic and deafening tones of the voice in those peoples were a well-marked and distinctive peculiarity. In India and Birmah, the voice was generally soft and very feminine, not so powerful as shrill; the natives of the hills had a more robust voice than those in the plains,—the former possessing a somewhat metallic twang, and the latter, a plaintive and whining tone. In Africa, the Negro was taken as the type, whose larynx was of intermediate proportions between the Chinese and Tartars, but differed from all other races of mankind in certain peculiarities, which the author described. The Negro wanted vocal power in whatever part of the world he was placed, but possessed the elements of a bellowing or roaring voice,—a deafening noisy sound, without harmony or distinctness. In speaking, the voice was smooth and harmonious, or rough and husky. Considered generally, the various nations of Europe possessed strong, powerful, sonorous, and clear voices; variations as to character and tone might and did exist, but, as a rule, they all agreed in power, full compass, range, clearness, and loudness of sound. The German had the most powerful voice in Europe, for reasons which the author gave; but in strength of voice he must yield to the Tartar, who, without exception, has the most powerful voice in the world. The condition of the larynx, with the length of the vocal chords, and other circumstances

bearing on the subject in the various nations of the three great continents, were considered, and the reasons given for the general conclusions arrived at.

The thanks of the meeting having been given to the author of the paper,—

Mr. PIKE said that he was able, from his knowledge of the Germans, to confirm every word that had been said respecting their voices. There was not the least doubt that, in ordinary conversation, they had the loudest voices of any people in Europe, and he considered that fact to have a connection with the German character. Mr. Pike mentioned, as an illustration of the loud voices of the Germans, that he had frequently noticed, when on the continent, that in rooms where there was a mixture of Germans and English present, the din of the German voices quite overpowered the buzz of English conversation, and was almost deafening. In that opinion he was confirmed by an American, who expressed his admiration of the superior modulation of the English voice. Mr. Pike, however, thought that the difference in voice, between the Germans and the English, was to be attributed as much to difference of mental constitution as to difference of vocal organs; and he thought the same difference showed itself in the profuse use of emphatic marks and typographical display in German publications. They emphasised all facts, making little distinction between those that were important, and those that were insignificant. Mr. Pike referred to a paper he had read some years ago before this Society, pointing out the difference between the mental characteristics of Germans and Englishmen,—the Germans showing a greater diligence in the acquisition of facts and the English a greater aptitude for generalisation and construction. There was, however, sometimes great confusion produced by not distinguishing Germans proper from German Jews, the latter being quite distinct; and he wished that distinction had been noticed in the paper. A very large proportion of the so-called Germans who had become famous were Jews. He thought there was a correlation, on the one hand, between the delight in the acquisition of mere facts, the love of emphasis carried to excess, and so defeating itself, the loudness of the voice, and the breadth of the head; and on the other hand, between length of head, and the power of grouping facts in accordance with principles, of inventing, of constructing, and of modulating the voice so as to agree with the ideas to be expressed. The German Jews were distinct in the shape of the head, as well as in the character of the voice, from Germans proper. He believed that the Tartars had very short heads, and the Germans also; and both nations were similar in the strength of their voices. The English, on the other hand, had long heads, and less obtrusive voices, with more modulation. Sir D. Gibb's paper confirmed his opinion that there was a correlation between the voice and the mental constitution.

Dr. CARTER BLAKE remarked on the difficulty which the Negroes and mixed races in Central America experience in pronouncing English and Spanish, while they pronounce French with great facility. The Spanish *v* they do not pronounce as a Spaniard would, like a vari-

ation of the *b*, but as a direct coarse *b*. He conceived there might be some relationship between the thick lips of the Negro and the difficulty of uttering labial sounds. They had also great difficulty in pronouncing the Spanish *j* like the Greek χ , but sounded it like *k*. These difficulties were experienced alike by Negroes of pure blood and by Mulattoes, while they had no difficulty in pronouncing the vowels of the French language; the French *u*, in particular, they pronounced more correctly than most Englishmen could do. The "Caribs" of the Mosquito coast talk a mixture of French and of harsh native, frequently Wulwa, language; yet they change from the one to the other with a facility which few Englishmen could rival, though the English and Spanish they cannot speak with accuracy, which he attributed to some anatomical peculiarity.

Dr. ROWDON considered that Sir Duncan Gibb attached too much importance to the anatomical construction of the larynx, and too little to other parts that were essential to voice. The nasal organs, for instance, had a wonderful influence on the voice; and there was great advantage in having large powers of inspiration and expiration, which had a marked influence on the voice. Great differences were perceived in the voices of the inhabitants of different counties in England. It would be desirable to consider how far these differences were affected by differences in the construction of the larynx, to establish any safe conclusions; and he thought the conclusions arrived at in this paper were not borne out by the statement of facts.

Mr. MACKENZIE doubted whether the Germans had a louder voice than other Europeans; and he differed from Mr. Pike as to the relation between the loudness of voice and mental constitution. He thought the difference depended more on the manner of living. He differed from the opinion that the Germans indulge in too much emphasis; and he observed also that their articulation was more distinct than that of other nations.

Dr. CHARNOCK said he had some acquaintance with most of the peoples of Europe, and the loudest voices that he knew of were those of the Venetians and the Neapolitans. The term Tatar was very vague, there being thirty or forty different denominations of Tatars. When at Kasan, on the Volga, which was partly inhabited by Kiptshak Tatars, he did not notice anything peculiar about the voice of the people. Nothing had been said as to the lungs, which were, no doubt, important organs in relation to the strength of the voice. He thought the voice increased as you went from east to west, the voice of the Germans being more powerful than that of the Asiatics; while that of the Americans was more powerful still.

Mr. McGRIGOR ALLAN thought that the paper did not do justice to the Negro, who had a most musical voice,—so musical, indeed, that a Negro could almost be distinguished by his voice alone. It was not the loudness of the voice but the pitch of it that made a man the best heard. As to the Germans, he questioned their speaking so loudly as had been asserted: for they smoked too much to speak loudly, though they used longer sentences than the English. Referring again to the voice of the Negro, Mr. Allan said that its musical

character showed that he was far removed from the ape ; which animal uttered a sound that was extremely harsh and dissonant.

The Rev. DUNBAR HEATH thanked Sir Duncan Gibb for the valuable papers he had contributed to the Society on the human throat. In the present one, he should have preferred entering more fully into the consideration of the four parts which were specially required for articulation, viz., the lips, the tongue, the throat, and the palate,—particularly the power of the tongue. Mr. Pike had suggested that the length or the roundness of the shape of the head was an indication of certain peculiarities of voice ; and if that suggestion were adopted, they should have to bring in also the human mind on the subject, and it would have to be further divided. By considering all these divisions of it, they might, no doubt, learn much as to the character of races ; but what was the value of race-character, after all ? If it were merely accepted as a fact, that difference of voice indicated difference of race, they would learn little ; but the mind went back to distant times, and the subject would become interesting if race characteristics led to the origins of people. He believed it would be found that all European nations were once Tartars, and dumb, and that an Aryan race arrived among them, who taught them speech. Given one race, with such powers as suggested, whose attention was directed to modulation of the voice, that race would arrive earlier at the acquirement of useful speech than any other, and the rest of Europe would ultimately acquire the same.

Mr. G. CAMPBELL said that his impression, after a long residence in India, was that the voice of the Indians was very good, and, like that of Europeans, capable of being very well modulated. He had had great opportunities of noticing the voices of the Bengalese when speaking the English language in the law courts in India, and he considered their facility in the use of English was marvellous ; and their voices were as strong as those of Englishmen, in proportion to physical strength. The exactness with which they pronounced English words was superior to that of any European race, except the Low-Germans of the north, which was the more extraordinary as they had not the free social intercourse with English people which many foreigners possess, having been merely taught it in schools. He suggested that it was worthy of inquiry whether the capacity for pronouncing correctly English words, evinced by these Indians, was not one more proof of their relationship to ourselves, and might not possibly point to a closer relationship to ourselves and the North Germans than to the other races of Europe.

Mr. JONES said he had been for many months associated with a mulatto who, in outward appearance, resembled a negro, and who spoke the most polished English, and he spoke also French, Italian, Spanish, and German.

Dr. KING observed that it was a very original paper, and he believed it was the first time that the organs of the voice had been considered as characteristics of race. The voice was, indeed, a distinguishing character in several races, and he adduced, as an instance, the *click* of the Bushman, which was very peculiar and produced several different

sounds. The Esquimaux, again, were uniformly ventriloquists ; there must be some peculiar organisation to give that remarkable power which all, more or less, possessed, and some to an extraordinary degree. The Indian races of America also possessed great power in modulating their voices, which enabled them to imitate correctly the calls of all animals.

Sir DUNCAN GIBB, in replying to the remarks on his paper, said that many of the speakers had confounded the elements of speech with the voice, the character of which was a totally different thing from the capacity of speaking different languages. In considering the power of the voice they must not only take into consideration the bellows action of the lungs, which would have little effect in producing modulated sounds but for the formation and structure of the larynx. Sir Duncan Gibb referred to the diagrams to explain further his observations on the voice of the negro, the sound of which, owing to the peculiar position of the ventricles, could not be reverberated to the same extent as in the cavern-shaped ventricles of Europeans. It was the anatomical peculiarities of the larynx which regulated the character of the voice in various peoples. In the Chinese the voice of the men approached that of the females, because the larynx was shallower than in Europeans. As to the Tartars, in speaking of them he referred to all the races which possess the same character of voice ; and those of Russia, alluded to by Dr. Charnock, must have lost some of their powers of voice. The pronunciation of certain letters with ease and of others with difficulty, mentioned by Dr. Carter Blake, was a peculiarity that did not affect the strength of the voice. He agreed with Dr. Campbell in his remarks on the natives of India, which applied to the females as well as to the males, as was noticed in the paper. With regard to the elements of speech, referred to by Mr. Heath, there was no doubt that speech depended on combined influence of the various parts alluded to, but it was difficult to take them into consideration separately, when considering the question of the voice in general.

Dr. CARTER BLAKE, F.G.S., Hon. F.A.S.L., made a communication on the skull, jaw, and limb-characters afforded by the specimens recently discovered at Cro-Magnon (Les Eyzies), France, and contrasted them with those of similar, and in one case greater, age from the Belgian bone-caves. He pointed out that whilst the Belgian caves afforded evidence of man in some degree pithecoïd, yet, on the whole, exaggerating the characters of the lower Slavonian races ; the French remains were entirely *sui generis*, and were those of men who, although presenting some simial characters, yet, in cerebral capacity, were superior to most existing races, and in some respects resembled the Celtic crania of the present day.

The Meeting was then adjourned till the 5th of January.

JANUARY 5TH, 1869.

DR. CHARNOCK, VICE-PRESIDENT, IN THE CHAIR.

The minutes of the previous meeting were read and confirmed.

The following new members were elected :—

Fellow—Tom Craston, jun., Esq., 2, Romsey Road, Stockwell Park, S.

Local Secretary—Charles Gilman, Esq., for Jamaica.

The following presents were announced :—

FOR THE LIBRARY.

From the SOCIETY.—Journal of the Royal Asiatic Society, North China Branch, No. iii.

From the EDITOR.—The Medical Press and Circular.

From Dr. CARTER BLAKE—The Travels of Pedro de Cieza de Leon.
By C. R. Markham.

From E. W. BRABROOK, Esq.—Antiquity of Man : Sir C. Denison.

FOR THE MUSEUM.

From CHARLES GILMAN, Esq., Loc. Sec. A.S.L.—Two Bows and Five Arrows of Rama Indians from Nicaragua.

From Captain BURTON.—Human Remains of Tupy Indians from a Brazilian Kjökkenmödding.

Dr. CARTER BLAKE read the following description of a skull, which was placed on the table, received from the Chincha Islands :—

On a Skull from the Chincha Islands. By C. CARTER BLAKE, Doct. Sci., F.G.S., Hon. F.A.S.L., Lecturer Comp. Anat. and Zool. Westminster Hospital.

The skull exhibited by the Rev. J. G. Wood, Loc. Sec. A.S.L., is derived from the Guano Deposit, Chincha Islands. To avoid all logomachy, I may premise that in no sense can it be termed a Chincha skull in the sense in which the word has been commonly used.* The word, in the signification applied to it by Cieza de Leon, has been applied to the inhabitants of the Great Valley of Chincha. The present skull has been derived from the islands bearing a similar name. It remains to be seen whether it belongs to the Qquichua or Chincha type of skull, if as I have suggested in my paper on the "Cranial Characters of Peruvian Races," that the inspection of a very large series of ascertained skulls will alone enable us to decide whether there is really any distinction between the Chincha and Qquichua types of cranium.

Cieza de Leon (p. 260) says that the first inhabitants of the Chincha Valley were of small stature, and that the Chinchas drove them before them and finally exterminated them. The theory might be propounded that the inhabitants of the Chincha Islands were the descendants of this early race. The small cranium of the present specimen might lead one to infer that some of these smaller races were driven towards the Chincha Islands ; but I guard myself against advancing such a theory.

The present skull is markedly brachycephalic, and affords marks of sinistral occipitolateral comprimation. The foramen magnum has its

* *Mihi in Trans. Ethn. Soc. Lond.*, new series, ii, 222, 225, q. cf. *passim*. *Travels of Cieza de Leon*, by Markham, 228, 260.

longitudinal median axis towards the dextral side. The mastoids are large. There are neither paroccipitals nor pneumatic processes. The basisphenoids and basioccipitals are unusually broad. The glenoid cavities are deep and laterally extended; a condition which is concomitant, or perhaps subserves relationship with the hard diet of the maíz-eating aborigine. The teeth are large and worn. The individual was probably of between twenty-five and thirty years of age, as shown by the condition of the unworn crown of *m* 3. The lateral view of the skull shows that the line of greatest height (to a spot about half the total length of the sagittal suture) is longer than Frère's line to the confluence of the coronal and sagittal sutures. All the sutures are open, especially those near the lateral fontanelles, a character which has reference to the occipital compression which the skull has undergone. The alisphenoids and parietals join on both sides. The sutures are not remarkably complex, and there are no Wormian bones. The superciliary ridges are not excessive, and the suborbital foramina are small. Slight maxillary prognathism exists.

In the general characters it rather agrees with the skulls labelled as Quichua, and derived from Pachacamac, in our public collection than with the known Chincha skulls (as, *e.g.*, Coll. Surgeons, No. 5424, British Museum, *y*). I should not infer from this specimen that it belonged to any other race than that of the brachycephalic inhabitants of the Western Peruvian Valleys, which again reappears on the eastern side of the Andes, amongst the Aucas, and other south-eastern tribes. The Auca skull in the Society's collection may be profitably compared with the present specimen.

TABLE OF MEASUREMENTS.

Greatest length	165 millimètres.	Cephalic index	...	83.6
" breadth	138 "	Facial angle	...	75°

The Rev. DUNBAR HEATH said he would take that opportunity to deliver himself of a heresy on the subject of skulls which he had not hitherto had the face to proclaim at any of their meetings. The skull on the table was no doubt a very small one; he would not dispute its form as a round skull. But what he wanted to know was, whether they learned anything by those facts—in short, was there anything in craniology or was there not? He admitted the facts, but he could not admit that from one skull the relationship of the race could be distinguished. There was no doubt consanguinity in races; but when attempting to distinguish the characters of savage races by the forms of their skulls, there should be hundreds of skulls produced to determine by a great mass of evidence that there was a general character in all. He wanted to know how many of the skulls had been measured, and what generic differences really existed between the skulls of different races sufficient to distinguish them. Unless these points were satisfactorily determined, he could not admit himself to be a craniologist.

Mr. MACKENZIE, while admitting that there were great differences in the size and form of skulls, did not consider these differences to indicate correctly either the size or the quality of the brain. With

regard to the skull on the table, he wanted to know where it came from, as the Chincha Islands was somewhat vague.

Dr. CARTER BLAKE, in replying to the remarks of Mr. Heath, said that in the collections in New York, Paris, and London there were about 3,000 Peruvian skulls, amongst whom there were marked and well ascertained distinctions. He had examined many Chincha skulls; he had made his deductions from them, and he saw no reason now to disturb those deductions. He felt certain that the skull on the table was not a Chincha skull, and that they, that race, were of eastern origin. The Chincha skulls, however, in our collections had some peculiar characters which the one now exhibited did not present. It was not a Chincha skull, although it had come from the very small Archipelago termed the Chincha Islands. With regard to Mr. Heath's remarks on the general value of craniology, Dr. Blake observed that in that part of South America, from the Equator to Valparaiso, there was a certain series of tribes with a certain fixed character of skull—the brachycephalic—and each of those different races, amounting to about twenty-three, presented distinct craniological characters, so that they could be distinguished one from the other. In point of fact, we know more about those races than of the races in any country in Europe, because in the collections of skulls it was known more clearly where they were derived from. He thought the induction quite enough to found a satisfactory theory.

The Rev. DUNBAR HEATH observed that what Dr. Blake had said was to him incredible. The large number of skulls he had examined must have been those of individuals of different ages, and it was known that each year of life altered the form of the skull. To believe that twenty-three distinct but cognate races could be distinguished by the characters of the skulls of individuals of all ages, possessing all kinds of habits, and who must have been also more or less connected, would require stronger evidence than he conceived it possible to obtain.

Dr. DONOVAN: As Dr. Blake has commented on certain physical characteristics of the skull brought forward, he, Dr. Donovan, begged to ask if Dr. Blake drew any inferences concerning the mental qualities of individuals—whether nationally or personally considered—from the size and form of their skulls; and if so, to what extent such indications might be trusted. Unless skulls afforded some such information they could have no ethnological value whatever.

Dr. CARTER BLAKE said the only fact he should like to infer from the shape of the skull on the table, so far as mental peculiarities could be defined from it, was that it was a skull which had been much altered in youth by deformation. Through all Northern Peru, without exception, there was not a single case of an Indian whose skull had not been depressed or compressed in youth. That compression, perhaps, produced an alteration in the size of the brain, although an opposite opinion was expressed by Professor Owen. The brain in the skull under examination had been excessively small, therefore, to a certain extent, it might be inferred to indicate small mental power. Dr. Blake added, in reply to a question from Mr. Macgrigor Allan,

that the skull had been artificially compressed on the left side. He had no doubt that when Mr. Heath studied the voluminous literature relating to Peruvian skulls, he would change his opinion ; as it was, the *argumentum ad ignorantiam* was scarcely admissible.

The Rev. J. G. Wood then gave an account of the chief poisons used by savages, commencing with those employed by the Bosjesmans of South Africa. He pointed out, in the first instance, the distinction between them and the bushmen of Australia, with whom they were sometimes confounded. To illustrate his description, specimens of the poisons and a large display of weapons used by savage tribes were exhibited, all of the arrows being poisoned and requiring great care in handling. The first class of poisons described were those made from animal substances. One of those poisons used by the Bosjesmans was formed from the poison-secreting glands of certain serpents, especially of the puff adder, mixed with the inspissated juice of an euphorbia. That poison, however, could not be exhibited in perfection, as the comparatively cold climate of England rendered brittle a composition which required heat to retain it in its proper condition ; in consequence of this brittleness nearly all the arrows had lost some of the poison. In applying the poison to arrows a barb made of a triangular slip of quill was generally used, which was separate from the arrow itself, but was inserted into the poison while still soft. When an arrow so constructed entered the flesh the barb became detached and remained in the wound, retaining a sufficient quantity of the poison to produce death. Another kind of animal poison used by the Bosjesman was that of the larva of an insect called kaa, or n'gwa, sounded with a peculiar click with the tongue. It was the grub of a beetle that feeds on a peculiar tree in South Africa ; the grub, on falling to the ground, formed a cocoon with the earth on which it fell. The Bosjesmans took the grub, broke it asunder, and with each half spotted the juices on the points of their arrows. The effect of that poison was to madden the wounded animals, and to kill by inducing furious mania. The points of the poisoned arrows were separate from the shafts and were kept inverted in the hollow head of the shaft, which served as a case until they were required for use. One of the arrows poisoned with the n'gwa grub was exhibited. Mr. Wood exhibited specimens of the grub itself, and the earthen cocoons, which were presented to him by Mr. T. Baines. He then proceeded to describe several vegetable poisons used by the natives of Guiana, respecting which he had gained much information from the late Mr. Waterton, who had given him a complete set of the weapons which were exhibited to the meeting. The Macoushi Indians made a very strong poison, the manufacture of which was kept so great a secret that the person who made it entered covertly into the woods with a basket for collecting the materials, and built a hut wherein to concoct the poison unseen, and after it was made the hut was burned down for the better preservation of secrecy. Among the materials said to be used in the composition were certain ants, and the fangs of venomous snakes, but Mr. Wood believed that they had no practical effect in the poison, and that in all probability they were merely collected for the sake of deception. The poison was used in

various ways ; in one method of using it the points of small arrows were covered with it and propelled through a long blow-pipe, with which the Indians could strike an object at a distance of upwards of one hundred yards, and under circumstances in which a gun would be useless. These small arrows were strung together horizontally, so that they could be conveniently rolled into a bundle and inserted in a quiver adapted to hold them. By this contrivance, which Mr. Wood exhibited, the arrows could be safely deposited and readily taken out when wanted without danger. The effect of the poison was stated to be instantaneous, as it rendered the bird, or animal, struck immediately senseless, and thus prevented their escape. Mr. Wood said he had tried the effect of the poison on a hedgehog: the respiration of the animal immediately became slow, its eyes, which remained wide open, were without sensation and bore the touch of the finger on the eye-ball without shrinking, yet the animal went on breathing for upwards of thirty seconds. Mr. Wood then produced one of the blow-pipes used by the Indians for propelling their arrows, which had been given to him by Mr. Waterton, consisting of a very slight reed (called by the natives ourah) eleven feet long, having a natural polish inside ; for the sake of security the reed is inserted into the hollowed stem of a young palm (called by the natives samourah), its total diameter being barely an inch. It had a back sight (made of two incisor teeth of an agouti) as well as a fore sight in the manner adopted in the most approved rifles. With that weapon the Indians could propel their small poisoned arrows with great velocity and accuracy ; a piece of cotton wool being twisted round the arrow to make it fit the bore of the blow-pipe. The arrows are sharpened by being drawn between the saw-like teeth of the pirai fish (*Serrasalmus piraya*), just as knives are sharpened by being drawn between two steel plates ; half the lower jaw of the pirai is always attached to the quiver, together with a hank of silk-grass thread. The flight of the arrow was so rapid that it could not be seen until it struck the object. Mr. Wood showed the action of the weapon by blowing a small arrow through it at an object in the gallery ; the effect was produced by a sharp quick puff of the breath, not by continuous blowing. The poison retained its power for a long time if not allowed to get damp, and the Indians are so well aware of the fact that they construct quivers for holding them which were ingeniously contrived for keeping the arrows dry. One of these quivers was exhibited. For killing large animals bows and larger arrows were employed, the poisoned ends of the arrows being kept separate and fitted on to the shaft just before being used. Rotary motion was communicated to the arrows in their flight by attaching to their lower ends two feathers, one from the right wing the other from the left wing of a bird, which acted obliquely against the air, and thus imparted the rotary motion required. Mr. Wood then briefly described the arrows and blow-pipes used by the savages of tropical America, by the Cingalese, and by the Dyaks of Borneo. He also exhibited two blow pipes, or sumpitans, used by the Dyaks for shooting their arrows, to one of which the head of a spear was fixed, so as to combine the uses of the two weapons, in the manner of a musket and bayonet ; this

weapon was presented to him by C. T. C. Grant, Esq., who served for several years in Borneo with Rajah Brooke. The other was remarkable for the manner in which the butt was inlaid with metal. The small arrows used by the Dyaks are poisoned with an extract from the upas tree, the nature of the action of which he said Mr. Grant, who was present would explain. A bamboo flask of the poison was exhibited. Mr. Wood concluded his very interesting account of the poisons used by savage races by exhibiting some skilfully made daggers of the Dyaks, the blades of which were striated for the purpose of retaining poison on the surface.

Mr. GRANT, formerly attached to the government of Sarawak (Borneo), said the upas was a magnificent tree ; he had seen one at Borneo proper, and under the shade of its branches were many Malay graves, but the old stories about its deadly effects to human beings approaching it, or the birds flying amongst its foliage, were the fabrications of a people given to a highly coloured imagination. The poisonous gum was only fatal when fresh, and if old it could be extracted by sucking the wound immediately after it was inflicted. The principal danger under such circumstances was the barbed fish-bone point of the poisoned "sumpit" (arrow) breaking off and remaining in the wound. When, however, the poison is fresh the effect is rapid, and causes death in little over an hour ; the fever and sleepiness resulting from the upas is not unlike, in its effects, the poison of the "cobra capella" snake. Six or seven years ago an attack was made on a tribe of "Kanawit" Dyaks (Borneo), a retaliation for the assassination of two English government officers of Sarawak. The Kanawits (a tatooed tribe) used the sumpitan freely, and from twenty to thirty of the government native force were killed by the arrows, which were freshly poisoned. The lives of a few of those wounded were saved by the gentleman commanding the force giving them strong doses of brandy and ammonia, keeping them in constant active motion, and thus warding off the fatal sleep. This appears to be the only remedy at present known. He (Mr. Grant) spoke from personal experience, as he was well acquainted with the Kanawit and other tribes using the sumpitan, as also with that weapon itself. The two officers killed were personal friends of his own, and he assisted in equipping and despatching the expedition alluded to, which was commanded by his own comrades, while he was acquainted with many of the natives composing the force. One of the Malays who was wounded with the upas, but whose life was saved by brandy and his being kept in incessant motion, was well known to him (Mr. Grant). Mr. Grant concluded by stating that it was a remarkable fact that all the Borneo aboriginal Dyak tribes using the sumpitan are, more or less, tatooed ; while those clans who are not thus ornamented seldom or never use the blow-pipe and poisoned arrow. Anthropologists may, perhaps, be able to explain this circumstance, and to discover whether it exists amongst the American Indians, in Africa, or in other countries where the blow-pipe is used ; he (Mr. Grant) merely mentioned the fact.

Mr. RIDDELL read an extract from Humboldt, describing the manner in which the wourali poison, is made, and its effects.

Mr. MACGRIGOR ALLAN said he was not aware that natives so low in the scale of civilisation as the Hottentots and Australians used such virulent poisons, and he thought that the term "savages" could scarcely be applied to a people who were capable of making such ingenious weapons, and of concocting the deadly poisons which they applied to the points of their arrows. When it was found that so much ingenuity was displayed by such people, it threw a light on the origin of civilisation, which appeared to have been a gradual process. There was no absolute inferiority in the races of man if they were taken on their own ground, and the ingenuity exhibited by people usually reckoned as savages, showed that civilisation proceeded by degrees and was not originated in a supernatural way.

The Rev. DUNBAR HEATH observed, that though the poison used by savages was not abstractedly an Anthropological question, yet the consideration of the subject suggested by Mr. Allan rendered it so. The construction of the arrows, the methods adopted of poisoning the points, and of propelling them, showed great ingenuity in the races who produced such weapons. As to the nature and quality of the poisons, he did not think much consideration need be given in that Society. The manner in which the poisons acted on the blood was, no doubt, an interesting point viewed physiologically, but in an Anthropological point of view the question principally related to the ingenuity of the races by whom such weapons were constructed.

Dr. BEIGEL was glad that Mr. Grant had confirmed the opinion that the poisons used by savages were not so fatally poisonous as they had been described. Poisons manufactured without a knowledge of chemistry must differ very much in their effects. The practice mentioned of using the fangs of snakes in concocting poisons showed ignorance of the fact that the poison was only contained in the glands which secreted it, and not the fangs which merely pressed against the glands and extracted it: the fangs themselves being merely channels to convey the poison. Before travellers like Alexander Humboldt, Sir George Schomburgk, and others, had gained knowledge of the preparation of the poison, fabulous accounts have been given of the latter which still partly exist in the minds of those who have no means to enter into the scientific examination of such questions. The quantity of the ourara poison which is likely to be dissolved from the spear was not capable of killing a man or any large animal. He had himself administered ourara to hundreds of people, as it was recommended as a cure for epilepsy; the physiological action of it was most wonderful. It required about two grains to produce any poisonous effects on man; and after that quantity had been taken, for the first few minutes no change was observed. In ten minutes the eyes became dim and the power of sight was lost; and finally, the limbs become motionless, being paralysed, but the patient remained perfectly sensible. In twenty minutes the effects of the poison went off, and he was restored. That poison was dissolved with difficulty; it could not be dissolved in water, and if an arrow tip with it were thrust into any muscle no quantity sufficient to poison could be absorbed by the blood. As long as the muscles of respiration are not paralysed by the poison, no

danger to life exists; and, therefore, if artificial respiration is performed, life can always be preserved, even if the action of the poison has been very intense. Thus, Mr. Waterton gave some to a donkey, which was paralysed, but continued breathing, and ultimately, after seven hours, recovered, though a large quantity was used. In his (Dr. Beigel's) opinion the savages could do very little injury with the ourara poison. Ourarine, an alkaloid prepared from that substance, was much more powerful, and therefore more adapted for accurate experiment on the action of the poison. The action not taking place till after about ten minutes of introducing a well-dissolved solution of the poison into the circulation, therefore it could be of no use in preventing the escape of animals wounded by arrows tipped with it. He was inclined to think, therefore, that when an animal was suddenly killed by the arrows the effect was not produced by the poison but by the arrow having struck some vital organ.

The Rev. J. G. Wood, in replying to the remarks on his communication, said that the upas poison lost its power very quickly, but such was not the case with the wourali poison. The arrows given to him by Mr. Waterton had been covered with that poison sixty years ago and still retained their full power, because they had been kept quite dry. Great many experiments had been made with that poison, and failures had often occurred because sufficient care had not been taken to use the best poison in a perfect condition. There was a great difference in the power of the poison, some of which was made for use and some for sale; and, in answer to a question from Dr. Beigel, he mentioned an instance of an Indian who had been wounded in the arm by one of his own poisoned arrows, and who died a few minutes afterwards.

The meeting then adjourned.

ANNUAL MEETING.

JANUARY 19TH, 1869.

DR. JAMES HUNT, PRESIDENT, IN THE CHAIR.

The Minutes of the last Annual Meeting having been read and confirmed, the following statements of account, prepared by Messrs. Grey and Prideaux, of Lincoln's Inn Fields, and audited by Mr. J. Gould Avery and Mr. J. Epstein, were read by the Treasurer.

INCOME AND EXPENDITURE.

The Income of the Society during the past year		£	s.	d.
from subscriptions has been	- - - -	1242	3	0
And the Expenditure as follows:—				
Accounts paid as per Income and Expend. acc.	439 14 9			
Debts contracted during the year not paid as				
per balance sheet	- - - - 450 15 0			
	Together	890	9	9
Available surplus of Income from subscriptions	-	351	13	3
There has been a further receipt from publications		91	8	9
Total available surplus for 1868	- -	£443	2	0

The Director then read the Report of Council as follows:—

*Report of the Council of the Anthropological Society of London
for the year 1868.*

1. Your Council, in rendering their Report on the events which have affected the Society during the sixth year of its existence, do so with feelings of satisfaction at the progress which has been made in many important respects, notwithstanding great drawbacks, and much opposition.

2. *As to the Meetings.*—During the year, sixteen ordinary meetings have been held, at all of which the attendance of Fellows has been large, and the discussions have been well sustained and interesting. Two Special General Meetings have also taken place.

3. *As to the Papers.*—The following papers have been communicated to the Society:—

GENERAL ANTHROPOLOGY.

Sir Duncan Gibb, Bart., V.P.—Report on Anthropology at the British Association, 1868.

A. L. Lewis, Esq.—Report on the Congress held at Norwich, 1868.

Pf. Hermann Schaaffhausen, Hon. Fellow—On Darwinism and Anthropology.

Dr. Cornelius Donovan—On the Fundamental Principles of Anthropological Science.

ARCHAIC ANTHROPOLOGY.

Henry Prigg, Jun., Esq.—On a Ground Stone Implement, from Flempton, Suffolk.

Edward Charlesworth, Esq.—On recent Discoveries of Flint Implements in Norfolk.

HISTORICAL ANTHROPOLOGY.

C. S. Wake, Esq.—On the Psychological Unity of Mankind.

W. C. Dendy, Esq.—Anthropogenesis.

Dr. E. S. Charnock, V.P., and C. S. Wake, Esq.—On Language as a Test of Race.

Hodder M. Westropp, Esq.—On the Origin of Language.

DESCRIPTIVE ANTHROPOLOGY.

Lieut. Oliver, R.N.—On the Hovas of Madagascar.

J. McGrigor Allan, Esq.—On Europeans and their Descendants in North America.

J. Beddow, Esq., M.D.—On the Physical Characteristics of the Danes.

J. Barnard Davis, Esq., M.D., F.R.S., V.P.—On an Aïno Skeleton and Skulls.

COMPARATIVE ANTHROPOLOGY.

Sir G. D. Gibb, Bart., V.P.—On Pendency of the Epiglottitis.

The same—On the Character of the Voice in Different Nations.

L. O. Pike, Esq.—On the Claims of Women to Political Power.

Dr. C. Carter Blake—On the French and Belgian Bone Caves.

4. *As to Honorary Fellows.*—The following distinguished men of science have been elected Hon. Fellows of the Society during the year :

Professor Rudolph Virchow, of Berlin ; Professor-emeritus G. Tschurowsky, of Moscow ; Professor E. Julius Bonsdorff, of Helsingfors ; Prof. Giustiniano Nicolucci, of Turin.

Your Council congratulate the Society on the honour done to it by the enrolment of these illustrious names on its lists.

5. *As to Deaths of Honorary Fellows.*—On the other hand, the Society has lost three of its Honorary Fellows by death,

John Crawford, Esq., F.R.S. ; Professor Van der Hoeven, of Leyden ; M. Boucher de Perthes.

6. *As to Corresponding Members.*—To the list of Corresponding Members the following fifteen names have been added during the year :—

Victor Baron V. Erlangen, Wiesbaden ; Contre-amiral Vicomte A. de Fleuriot, Finisterre ; Professor Paolo Gaddi, Modena ; Professor Antonio Garbiglietti, Turin ; Dr. W. H. Hammond, New York ; Dr. Isidore Kopernick, Bucharest ; Dr. Leemans, Leyden ; M. Louis Leguay, Paris ; M. le Hon. Brussels ; Cavalière B G. Miraglia, Naples ; Bábu Rájendrala Mitra, Bombay ; Dr. Robert S. Newton, New York ; Dr. Petermann, Gotha ; Dr. Sophus Ruge, Dresden ; B. R. Winthrop, Esq., New York.

7. *As to Local Secretaries.*—The following additional Local Secretaries have been appointed during the year :—

Buenos Ayres—Daniel Maxwell, Esq. ; Congo River—J. McCormick Fernando Po—A. Struthers, Esq., F.A.S.L. ; Granada, Nicaragua—A. Downing, Esq., M.D. ; Louisville, U.S.—Dr. H. J. Hulse, F.A.S.L. ; Memphis, U.S.—F. Ramsay, Esq., M.D. ; New Guinea—T. A. Campbell, Esq. ; Rio San Juan—Chas. Gilman, Esq. ; San Juan del Norte—Dr. Diezmann [since dead] ; Sydney, N.S.W.—W. G. Moore, Esq., F.A.S.L. ; West Kent—Rev. J. G. Wood, M.A., F.L.S.

8. *As to deaths of Ordinary Fellows.*—The deaths of fourteen Fellows of the Society have been reported to your Council during the year, as follows :—

H. W. Barlow, Esq. ; H. C. Bingham, Esq. ; F. E. Blyth, Esq. ; Rajah Sir James Brooke ; J. Smith Burke, Esq. ; W. Cory, Esq., F.G.S. ; J. T. J. Doyle, Esq. ; H. Driver, Esq. ; Robert A. Drew, Esq. ; J. Gill, Esq. ; Major G. A. James, F.R.G.S. ; John Lister, Esq., F.G.S. ; W. R. Milner, Esq. ; Dr. Samuel Rule, of Madras.

9. *As to Resignations and Elections.*—Your Council, having resolved during the present year to take strict measures for the recovery of subscriptions in arrear, they regret to have to report the resignation, which they attribute principally to this cause, of fifty-nine Fellows. On the other hand, sixty-three new Fellows have been elected during the year.

10. *As to the Rose Collection.*—The Fellows will recollect the interest caused by the exhibition in the Society's rooms, during the early part of the year, of the remarkable collection of worked stone implements accumulated by Mr. J. Wilmot Rose, during several years' residence in Denmark. The collection was offered to the Society for purchase, but was necessarily declined, no fund being available for that purpose.

11. *As to amalgamation with the Ethnological Society of London.*—The Fellows have been made acquainted, through the several Reports

published in the Society's Journal, with the whole history of the negotiations that have taken place between the Society and the Ethnological Society of London, with a view to effect the union of the two Societies. Your Council regret that an object, in many respects so desirable, should have been frustrated by the unscientific opposition raised to the name "Anthropological;" but they felt it their duty, upon this point, to listen to no compromise.

12. *As to Exchange of Publications.*—Your Council have authorised exchanges of publications as follows:—

With Prof. Ecker's Archiv für Anthropologie; the War Department of the United States; the Paris Society of Archæology; and the Manchester Free Library.

13. *As to the Museum.*—Valuable presents have been received for the Museum of the Society from,

Professor Bogdanoff, President of the A.S. Moscow, Hon. F.A.S.L.; Dr. E. Canton, F.A.S.L.; Dr. Diezmann, Loc. Sec. for San Juan del Norte, Nicaragua; Dr. C. Donovan, F.A.S.L.; Consul Hutchinson, F.A.S.L.; Dr. Kopernicky, of Bucharest, Corr. Mem. A.S.L.; Dr. J. Shortt, F.A.S.L., of Madras; G. B. Snell, Esq., Jun., through Dr. Charnock, V.P.; Dr. E. T. R. Tenison, F.A.S.L.; the Paris Anthropological Society, through the Minister of Public Instruction in France.

It has also given your Council much pleasure to accede to a suggestion from their valued Local Secretary for West Kent, the Rev. J. G. Wood, M.A., F.L.S., for the exchange of duplicate or surplus specimens between his private museum and that of this Society. The condition of the Museum has occupied much of the attention of your Council during the year, and they have constituted Mr. W. C. Dendy, Dr. Beigel, and Dr. Carter Blake a Committee for the special charge of this department.

14. *As to the Library.*—Contributions to the Society's Library have been received during the year from the following persons and public bodies:—

T. S. Barrett, Esq.; Dr. Beigel; Dr. Carter Blake; A. C. Brebner, Esq.; R. Brown, Esq.; Dr. H. Callaway; Dr. R. S. Charnock; S. E. Collingwood, Esq.; Rev. F. F. Cooke; F. W. Conrad Cox, Esq.; Dr. Barnard Davis, F.R.S.; S. Phillips Day, Esq.; Rev. J. Doyle, M.A.; R. Dunn, Esq., M.R.C.S.; Professor Garbiglietti; S. Guppy, Esq.; C. Harding, Esq., F.R.G.S.; G. Harris, Esq., F.S.A.; Dr. H. J. Hulcee; Dr. James Hunt, President; T. Inman, Esq., M.D.; M. Leon Van der Kindere; M. Edouard Lartet; K. R. H. Mackenzie, Esq., F.S.A.; Capt. Morrison; Dadabhai Naoroji, Esq.; Professor Nicolucci, Hon. Fellow; W. Pengelly, Esq., F.R.S., Local Sec.; M. Périer; Dr. C. Pearce; M. Quetelet; Professor H. Schaaffhausen; Dr. Carl von Scherzer; E. G. Squier, Esq.; M. J. L. Steenstrup; J. Stevens, Esq., M.R.C.P.; G. Tate, Esq.; Dr. E. T. R. Tenison; D. Francisco Tubino; R. H. Ulrichs; C. Staniland Wake, Esq.; E. G. Wake, Esq., M.D.; The American Antiquarian Society; the Anthropological Society of Paris; the Asiatic Society of Bengal; the University of Christiania; the Academy of Sciences of Copenhagen; the Essex Institute; the Ethnological Society of London; the Editor of the *Farmers' Journal*; the Geological Society of Glasgow; the Philosophical Society of Glasgow; the Editor of *Archiv für Anthropologie*; the Imperial Leopoldino Carolina Academy; the Royal Academy of Brussels; the Editor of the *Medical Press*; the Editors of the *New York Medical Journal*; the Editor of the *British Medical Journal*; the Imperial Society of Naturalists of Moscow; the Royal Society of Literature; the Royal Society of London; the Royal Geographical Society; the Royal United Service Institution; the Royal Society of Sciences of Saxony; the War Department of the United

States; the Royal Society of Victoria; the Academy of Sciences of Vienna; the Geological Society of the West Riding; the Academy of Natural Sciences of Philadelphia; the Society of Antiquaries of Scotland; the Institute of Sciences of Palermo; the Canadian Institute; the Public Free Library of Manchester.

Your Council regret that the necessity for rigid economy and the insufficiency of the office staff have prevented their giving to the Library, during the year, the attention its intrinsic value and importance deserve. They hope that the Council for 1869 may be more fortunate in this respect.

15. *As to Publications.*—The system of close retrenchment in expenditure which has been adopted by your Council during the last two years, has prevented the issue to the Fellows of any publications other than the Society's *Journal* and the *Anthropological Review*. The third volume of *Memoirs*, however, is in the press, and is in a very forward state. On the completion of that volume, your Council recommend to their successors the immediate issue of the instructions to Local Secretaries, as a matter of very urgent importance.

16. *As to the New Prospectus.*—Your Council have prepared a new issue of the Prospectus of the Society, copies of which will be supplied to Fellows upon application.

17. *As to the "Anthropological Review."*—The arrangements with the publisher of the *Anthropological Review* have been several times brought under the attention of your Council during the year. The result has, in each case, been to convince your Council that their often-expressed conclusion—that these arrangements were unexceptionable, and were advantageous to the Society—was a correct one. So much capital, however, was attempted to be made out of these arrangements, in certain quarters, that your Council at last determined to appeal to the Members at large for an expression of their opinion. It is very satisfactory to your Council to find that an overwhelming majority of the replies to their circular were in favour of the continuance of the existing arrangements: the numbers being—one hundred and fifty for the retention of the present arrangement, eight for the acquisition by the Society of the copyright, and twenty-four for the cessation of all connection of the Society with the *Anthropological Review*. They trust that the question has now been permanently laid at rest.

18. *As to the Presidentship.*—It was with real sorrow and concern that your Council learned from Dr. Hunt that, acting under medical advice, he should be unable to serve if re-elected to the office of President. They felt that such a decision was beyond challenge on their part: that it was not for your Council to urge upon Dr. Hunt further sacrifice of health and time in your service, when he had already devoted himself so long and so faithfully to the interests of this Society and of Anthropological Science. At the same time it appeared to your Council that it was their duty to ask Dr. Hunt still to favour them and the Society with the aid (as often as his health and convenience would allow) of that remarkable insight into difficult questions of policy, that ready generalisation and power of combining various in-

terests which distinguish him, and which have so largely contributed to the success of the Society under his presidency. With this object, and with the further desire to satisfy the Fellows that the retirement of Dr. Hunt involves no change of policy, your Council are glad to be able to state that his name will still remain in prominent connection with the Society, even though that connection should not involve the performance of any onerous duties, under the rule of the Society which retains Ex-presidents permanently on the Council. They abstain from any further comment on this question, knowing how readily all that is lacking in their attribution to him will be supplied by the consciousness of every Fellow.

19. *As to the Official Staff.*—Your Council regret to state that the arrangement mentioned in the Report of Council for 1867, relative to the securing the services as clerk, collector, and reporter of a Fellow of the Society was not carried out by him; and that, in consequence, the whole business of the Society has had to be transacted by Mr. Collingwood alone, with slight temporary assistance. Your Council think that the special thanks of the Society are due to their early Fellow and valued Secretary, Mr. J. Fred. Collingwood, for the voluntary extra exertions made by him during the year. Unasked, he gave up his vacation when a Fellow of the Society chose that opportunity for a bitter attack upon its management; and he attended during many nights till very late hours, while the Committee, of which Dr. Duncan was chairman, were engaged in their laborious researches.

20. *As to Travelling Secretaries.*—Edward Charlesworth, Esq., F.G.S., F.A.S.L., has been appointed Travelling Secretary to the Society in England; and Dr. C. Carter Blake, Honorary Fellow, held a diploma as Travelling Secretary, during his residence in Nicaragua, with great advantage to the Society.

21. *As to the Finances.*—Your Council refer with great gratification to the fact, developed by the Report of Dr. Duncan and the other Fellows nominated by him, and established by the statements of account now presented, that during the year, the liabilities of the Society have been reduced by £400 : 11 : 5. Your Council decline, as their predecessors have properly done, to affix any estimate of their own to assets, the value of which is not exactly ascertainable; but taking an estimate less than that of Dr. Duncan's Committee, as representing the relative improvement which, by strenuous measures of economy, they have been able to effect, the aspect of the Society's financial position has changed from a deficit of £180 : 5 : 5 to a surplus of £376 : 13 : 11. At the same time, your Council have been anxious to adopt measures for entirely freeing the Society from debt, and with this object a scheme was drawn up by the President and Director for transferring the Society's stock of books in the publisher's hands to a body of Fellows; each of whom should contribute £50 for their purchase. Several Fellows joined in this scheme, and your Council would still be glad to carry it into effect, should a sufficient number offer themselves.

(Signed)

G. DUNCAN GIBB, Bart., M.D., Chairman.

The Chairman appointed Rev. Dr. Kernahan and Mr. A. L. Lewis scrutineers of the ballot, which he declared to be opened.

Mr. W. B. Row moved, "That the Report of the Council be adopted." He had attended this meeting chiefly in consequence of a correspondence which had lately appeared in the pages of a public journal upon the financial position of the Society, and the management of the Council. After hearing the balance-sheet and Report of the Council, he must say he had been agreeably surprised by the figures and statements laid before the meeting. He believed that many other Fellows present shared in this feeling; but even had it been otherwise, he would venture to say that he was expressing the opinion not only of this meeting but of the Society at large, when he characterised the conduct of those Fellows, who had thus dragged the private affairs of the Society into public discussion, as being reprehensible. It was discreditable to themselves, and derogatory to the Society. With reference to the clause in the Report relating to the *Anthropological Review*, he desired to thank the Council for their resolution to continue its publication. He had formerly been a member of a provincial Society, in connexion with the parent Society in London, and he well knew the popularity of the *Review*, and the good service it did in begetting and keeping alive an interest in the science of Anthropology. Its discontinuance would have been doubtless injurious to the Society, and to the science it professes. He trusted that whatever change in the arrangement for its publication might be considered expedient from time to time by the Council, they would never allow the *Anthropological Review* to be wholly dissociated from the Anthropological Society.

Dr. FRED. M. SKUES seconded the motion.

Dr. NICHOLAS remarked, that as the finances of the Society seemed to be in so satisfactory a condition, he would take the liberty of suggesting an alteration with respect to the fees. It was now the rule to charge new Fellows with the fees of the whole year, notwithstanding that they may have been entered, and begun to enjoy the advantages of the institution in the last quarter. This was not properly paying fees "in advance," but also retrospectively. It was the custom in other societies—for instance, the Geological—to require payment only from that point of the year when the Fellow happened to be elected. He did not blame the conductors for their thriftiness; the Society was young, and doubtless required all the money that could be got: but he thought the rule in question had an unfavourable as well as a favourable bearing, since it had a tendency to prevent persons from joining in the autumn of the year, the time when entrance into our Societies was chiefly sought.

After further discussion by Dr. Donovan, Mr. Bendir, Dr. Duncan, M. Avery, Mr. Heath, Major Owen and Mr. Goldsmid, the Director replied, and the resolution having been put, it was carried *nem. con.*

The following obituary notices were submitted:—

Obituary Notice of the late Professor John van der Hoeven, Honorary Fellow of the Anthropological Society of London. By J. Barnard Davis, M.D., F.R.S., Vice-President A.S.L. — At an early period of the last year, March 10th, 1868, the Anthropological Society suffered the loss, by death, of one of its most distinguished Honorary Fellows. Our loss was one common to many other learned Societies, in this country as well as others, which had enrolled him among their Associates. It was felt in Holland, a small country, that one of their chief citizens, one of the great ornaments of science, had departed; by the University of Leyden, which occupies so high a rank, that the first of its Professors in Natural Science had become silent. Zoology, wherever studied, lost in him one of its most ardent cultivators and promoters, who had by his eloquent discourses, during a period of forty years, and by his various writings disseminated a knowledge of this science very extensively,—perhaps as extensively as any one of the present age. It is due to Professor Van der Hoeven to say that anthropological science, as the highest branch of zoology, lost in him an every way accomplished investigator, who had long directed his high powers, by predilection, to the Natural Science of Man, and had made Craniology an especial study. It is, therefore, exceedingly appropriate that we should devote some short testimony to his memory.*

* To justify the undertaking of such a task, it may be desirable to state, what opportunities the writer has been favoured with to become acquainted with him, besides a perusal of most of his anthropological writings. The first is the enjoyment of a somewhat active and never interrupted correspondence with him for fifteen years, as a large sheaf of upwards of sixty of his letters testifies. The honour of being received by him twice at his house, in Leyden, once on a visit to that city in 1856, and again in the year 1864; moreover, to be gratified with much further personal intercourse with him at the meetings of scientific associations, as that of the British Association at Oxford, in 1860; that of the Scandinavian Naturalists, at Stockholm, in 1863; and again, that of the British Association, at Birmingham, in 1865. As this continued intercourse with so learned and so excellent a man has exercised a most important and beneficial influence upon the career of the writer, he has much satisfaction in recording it here. There is a graceful tribute to the kindness shown by Van der Hoeven to those who were brought into contact with him, in Professor P. Harting's account of his life, read before the Royal Academy of Sciences of Amsterdam (1868). Professor Harting says,—“It is now thirty years ago that I first came into contact with him. I was then a young physician, established in a small inland town, shut out from all the aids academic cities afford, without name,—let me add, for it is the truth,—without any expectation that I should ever obtain one. Van der Hoeven, on the contrary, was already a renowned man, whose name, both at home and abroad, was mentioned with honour. I did not know him personally; yet his writings had taught me to look up to him with great reverence. It was then, moreover, with true reluctance, and after much hesitation, that I determined to address to him the question, whether he judged an account of some observations made by me, whilst I was a student, and in the midst of the interruptions of practical life, worthy of a place in the *Journal of Natural History and Physiology*, at that time edited by him and

The leading events of his life may soon be stated. He was born in the city of Rotterdam in the beginning year of this century (February 9, 1801), and was the youngest of four brothers; three of these lived to mature age, and became eminent. One, and he is the oldest, only survives, that is Pruys Van der Hoeven, emeritus professor at Leyden. In 1803 John Van der Hoeven lost his father, and in 1810 his mother was married for the second time to Dr. Martinus Pruys, a physician of Rotterdam.

It was at first intended that young Van der Hoeven should become a surgeon, but, on commencing his education in this profession, he soon acquired a desire to go to the University, and to make a beginning of his career from a higher point. As he had not at that time acquired any knowledge of the Latin tongue, his step-father at once acceded to his wishes, and afforded him the aid of private lessons in classics. In this study there is every proof that he was pre-eminently successful, for, in the subsequent years of his life, he not only wrote Latin with correctness and elegance, but spoke it readily.

In 1819 he was inscribed as a student at the University of Leyden, where he first devoted his especial attention to physics. The Professorship of the Natural History Sciences was then vacant, by the death of the eminent Professor Brugmans,* in that year. It was only three years afterwards, in 1822, that it was filled by Reinwardt, on his return from the East Indies. It thus becomes obvious that Van der Hoeven received scarcely any instructions from the professors of the University upon that great branch of science to which his life was subsequently chiefly devoted. The distinguished Professor Gerard Sandifort, whose department was Human Anatomy and Physiology, was a cultivator of Comparative Anatomy also. It was at an after period that he brought out his grand work on Craniology. He was almost the sole teacher, at the time of Van der Hoeven's student-life, who at all embraced zoological subjects in his course.† It is apparent that Van der Hoeven

our former colleague, De Vriese. The kind answer received from him, in which he corrected, with the utmost delicacy, a little mistake I had committed, together with the warm and encouraging welcome to the youthful, little experienced contributor to science, to go forward in the footsteps marked out, has exercised upon my subsequent course of life a decided influence. The encouragement received from such a man, has always remained in my grateful recollection." *Levensbericht van Jan Van der Hoeven, door P. Harting, 1868.*

* Brugmans had been accustomed for many years to deliver lectures on the Natural History of Man. He also made a collection of human skulls, availing himself of his position of physician to the Netherlands army, during the Napoleonic wars.

† Van der Hoeven was the pupil of Sandifort, from 1819 to 1824. Of Sandifort's "*Tabulæ Craniorum*," which only extended to three fasciculi, Van der Hoeven writes, in 1856:—"I often had the intention to give a continuation of this publication; but the occupations of my zoological profession, and other publications, prohibited the execution of this plan. If I can find time, and another shall not take it up, perhaps I may do it afterwards."

was, in a large measure, thrown upon his own resources of study, and derived but slight aid from the Professors in that which ultimately became his own special department, zoology. In the first year of his residence at Leyden, he felt himself able to answer a prize question proposed by the Academy of Ghent. The question was: "What is the use and value of Comparative Anatomy in establishing the divisions of the animal kingdom?" On the 3rd of October, 1820, an answer was deemed to be satisfactory which proved to be the production of the student of nineteen years old. This extraordinary incident influenced his future career materially; he had already besought the permission of his step-father to allow him to prepare himself for the Degree of Doctor in the Mathematical and Natural History Sciences. At this time his step-father desired for him, as a profession, that of a physician, to be exercised in his native city.

His success at the Ghent Academy removed every obstacle, and he was allowed to follow the promptings of his own mind in the future course of study he pursued.

The mathematical and natural faculty of the Utrecht University, in 1821, proposed a question for prize competition, which must be regarded as one of great difficulty.* It was, to give "A short and clear exposition of the structure and functions of the organ of hearing in man, so illustrated by the observations of recent anatomists and by comparative anatomy, that it may be seen what portion of this organ is most essential to hearing, and in what respect this is more excellent in man than in brutes."

Two answers to this question were sent in: the Faculty was of opinion that one of these answers would have deserved the prize if it had been the only one received, but that it was surpassed by the second: "the writer of which had given such abundant proofs of experience in human and comparative anatomy, as well as in *literæ humaniores*, and natural science in general, that certainly, without any doubt, the golden prize must be accorded to him." On opening the sealed letters containing the names of the competitors, it was found that the writer of the first answer alluded to was Willem Vrolik, and that of the second Jan Van der Hoeven.†

About the same time, namely the 23rd of June, 1822, a silver medal was awarded to Van der Hoeven, by the Provincial Society of Arts and Sciences at Utrecht, for a treatise which subsequently saw the light, under the title of a "*Disputation on the Doctrine of Final Causes, and its application to Zoology.*"

Professor Reinwardt, on coming to Leyden in 1822, became acquainted with young Van der Hoeven, showed himself highly prepos-

* The anatomy and physiology of the organ of hearing, has been more recently much advanced by the laborious researches of Professors E. Reissner, of Dorpat, E. Huschke, of Jena, Kölliker, Claudius, Leydig, A. Böttcher, M. Schultze, O. Deiters, V. Hensen, and K. B. Reichert, of Berlin.

† On the death of our mutual friend, the second Vrolik (William), Van der Hoeven reminded the present writer that all three had a common year of birth; viz., 1801. The only survivor lives to write these lines.

sessed with him, and himself opened the prospect to him, after the completion of his studies, to transfer a portion of the heavy burden resting upon his own shoulders to Van der Hoeven as his assistant.

On the 9th of November, 1822, Van der Hoeven was promoted to Doctor of Natural Philosophy and Master of Mathematics, after defending his Dissertation "on the Skeleton of Fishes."

In the following year there appeared in the *Transactions of the Leopold Caroline Academy of the Curiosities of Nature*, a treatise written by the Doctor of two-and-twenty years, entitled "A Memoir on the Genus *Ornithoryncus*." And a year later, on the 11th of June, 1824, he obtained the degree of Doctor of Medicine, after defending his "Pathological Dissertation on the Diseases of the Ears and of Hearing."

There is conclusive evidence that Van der Hoeven laid a broad and solid foundation before he left the University as a disciple, and a prospect was opened to him to return to the University as a teacher, which was ultimately, though not immediately, fulfilled. On the completion of his studies he made a journey to Paris, chiefly with a view to perfect his knowledge of medicine in the Parisian hospitals; here he gained the acquaintance of Cuvier and of Latreille, and some of their disciples, with one of whom then become known in his especial matter by his anatomy of *Melolontha vulgaris*, Strauss Durckheim, he practised insect anatomy. On his return to Holland he established himself as a physician at Rotterdam. Soon afterwards he was appointed Reader by the Batavian Society of Experimental Philosophy at Rotterdam, in which capacity he gave lectures on Physics.

In this position he only remained a year and a half, for, in 1826, he received the appointment of Extraordinary Professor to the University of Leyden, where he continued during the remainder of his life, for forty-two years, as one of the most eminent ornaments of that seat of learning. He entered upon his office on the 29th of April, by delivering a Discourse "On the diligent Study of Truth, especially in the quality of an Expounder of Nature."

In the same year he married Anna Van Stolk, whom he survived many years. Of the children born of this marriage there are three living: a son of the same name as his father, who is treading in his footsteps, practises medicine and surgery in the city of Rotterdam, and has given many proofs that he inherits his father's tastes and talents; and two daughters, the elder of whom is married to Mr. H. W. Fangman, judge at Dordrecht; and the younger, the amiable widow of Dr. P. Hoekema Kingma, late physician of Leyden, whose mournful decease took place on the 8th of January, 1868, and cast a shade of gloom on the last days of Van der Hoeven.

He became ordinary Professor in 1835. He often attended the Meetings of Foreign Scientific Associations. In July, 1842, he was present at the meeting of the Scandinavian Naturalists at Stockholm. Of this journey he printed an account on his return to Leyden, of which a second edition was afterwards issued (1845). More than once he took part in the meetings of the German Naturalists, and also of the British Association, as the "Reports" of the latter for 1847, 1850,

&c., testify. By these journeys, by visits of eminent men of science to the famous University of Leyden, and particularly by a very extended correspondence in various countries, he was brought into intimacy with the contemporary cultivators of natural science very generally. His merits were recognised by a large number of the learned academies of his own country, and of the other countries of Europe, in electing him among their Honorary Associates. The numerous catalogues of these and other honours conferred upon Van der Hoeven given by his friend, the excellent Professor P. Harting, cannot be further detailed here.

Nor will it be necessary here to dwell at any length upon those writings of Van der Hoeven which refer to that branch of science to which he was especially devoted, *i. e.* zoology. The first of these in importance was his large systematic treatise, entitled "Handbook of Zoology," in two octavo volumes (1828-33); of which the second edition appeared in 1849-50. The latter was translated into German by F. Schlegel and R. Leuckart, 1850-56, and then into English by Professor W. Clark of Cambridge, 1856-58. Besides this great work, very numerous other writings upon this branch of science issued from his pen, among which may be especially mentioned his important monographs on "The great *Salamander of Japan*," 1838; "*Recherches sur l'Histoire Naturelle et l'Anatomie des Limules*," 1838; "Anatomical Contributions to the knowledge of the *Nautilus Pompilius*," 1856; "Anatomical and Zoological Contributions to the knowledge of the *Menobranchus*, the Proteus of the North American Lakes," 1867. Besides these his chief contribution to this science of late years was his "*Philosophia Zoologica*," a work which is peculiarly impressed with the genius of Van der Hoeven. It was issued in 1864, and he regarded it as probably the last of his great labours. The "*Philosophia Botanica*" of Linnæus was before his mind in this production, which he had long contemplated. Professor Harting says it resembles this latter in many respects: "The same concise aphoristic form, the same art of saying much in few words, the same power over the language employed, we meet with in both books. Also the object for which both works were written is the same, *viz.*, to draw together in short sentences the chief contents of the science, and likewise to point out the way its cultivators must pursue in order to advance it further." Professor Harting afterwards expresses his decided preference for the "*Philosophia Zoologica*." In four books Van der Hoeven treats,—1, Of the bodily Structure of Animals, on the ground of Comparative Anatomy. 2, The History of their Development; 3, The Doctrine of their Arrangement; and, 4, The Geographical distribution of Animals. These four books, which take up scarcely 400 pages, "contain that which we may name the scientific quintessence of proper zoology, and besides that a very extensive literature."*

* The "*Philosophia Zoologica*" was noticed at some length in the *British and Foreign Medico-Chirurgical Review* for July, 1866. This article is remarkable for embracing in its heading another and quite distinct work, upon an entirely different subject, of its distinguished author, *viz.*, his "*Catalogus Craniorum*" (1860), to which the reviewer devotes a few sentences. Such a

Van der Hoeven at an early period gave this definition of zoology : "It is the knowledge of animal life, as it manifests itself in different forms upon the earth." In each of his subsequent works he followed out this comprehensive definition, first with respect to one animal or genus, and then with respect to another, until, in this way, he passed over almost all the chief divisions of the science. As Professor Harting says : "Such a broad comprehension of the aim of science was, in Van der Hoeven, his only possible choice, because he united in himself, in a high degree, two qualities, namely—a vigorous and trusty memory and a clear understanding, which knew how to combine facts in a higher unity, and to climb along the logical way to general deductions."

Besides his great merits as a cultivator of science, of which in this place but little can be said, Van der Hoeven was also very eminent as a teacher. His lectures were full of information, and always embraced the most recent investigations ; they were well arranged, concise, but very clear. His extraordinary memory afforded him ample illustration of every subject upon which he descanted ; and his cultivated taste and hand enabled him to render every aid to his spoken words by endless sketches.

It would be improper not to mention that he entered freely into every proposal to diffuse scientific knowledge, and to give a moral and religious bent to its application. At the latter part of his life he was accustomed to give special lectures to teachers, both male and female, in order that instructions might be conveyed by these to their own pupils. He wrote popular scientific tracts, some of which were translated into the German language. He contributed the zoological portions to a new edition of Uilken's *Perfections of the Creator contemplated in His Creatures*. These were afterwards included in a volume, under the title of the *Natural History of the Animal Kingdom*. Of this work Dr. Salverda, of Groningen, speaks in the highest terms ; he pronounces it "infinitely excellent, and perhaps one of the best books Van der Hoeven ever wrote on zoology." Those who knew him would be quite sure that his engagement in this labour would be most congenial to him. He was also a liberal contributor to another work, which appeared in annual volumes, entitled the *Album of Nature*.

Besides his regular courses on zoology, he gave at different times others on Comparative Osteology, on Mammalogy, on Entomology, on Geology, and on Anthropology. These last he commenced in 1831, and repeated them every two years ; they attracted the attention of the Professors themselves, as well as the students of the University.*

proceeding seems somewhat singular, and not very easy to be explained, forasmuch as there appeared a distinct and somewhat lengthened review of the "Catalogus" in the same periodical, when it issued from the press (*Brit. and For. Med.-Chir. Review*, July 1860), which is wholly ignored by the reviewer of the "Phil. Zool."

* In 1844, Van der Hoeven published a sort of syllabus of this last course, under the title of "Sketch of the Natural History of Man," designed for the use of his lectures (*Schets der Natuurlijke Geshiedenis van den Mensch. Ten dienste zijner lessen ontworpen door J. van der Hoeven*). In the pre-

It has been already said that this last, Anthropology, was the subject for which he had an especial predilection. He regarded it earnestly and constantly as the highest department of the more extended science of zoology; he saw clearly that it should be based upon the comparative anatomy and physiology of human races; and there is no doubt that he contemplated, at different periods of his life, the illustration of the races of man upon a much larger scale. With this view he made collections of human skulls of the people of all countries, for he regarded craniology in a great measure as the basis, and unquestionably as a substantial and essential element, of Anthropology. He also collected drawings of the different races of men, coloured from nature, which the writer had the gratification to examine in 1856. And it is tolerably certain that had his mind been less entirely engrossed by the immediate duties of his Professorship, and had the success of his fine work, entitled *Contributions to the Natural History of the Negro Race* (1842) been more decided, that he would have issued a series of volumes, as he proposed in the Preface to this last book, each of which would have been devoted to some great division of mankind, which would have had accurate and artistical illustrations. With such a comprehensive design, we cannot help regretting that he should not have

face, he says, he employs the word Anthropology in the sense pointed out by Rudolphi, as a synonym for the Natural History of Man, in the same manner as naturalists use the words Ornithology, Ichthyology, etc. He adds that the renowned Brugmans, who for more than thirty years, from time to time, gave anthropological courses at Leyden, used the term in the same sense. He regrets that he did not happen to be present at Brugmans' lectures, of which he had only got a sketch of the last course, that of 1818-1819, from his fellow students, as he himself only came to the university in September of the latter year, Brugmans having died in July. Van der Hoeven divided his subject, very naturally, into two parts,--first, the difference between man and animals; second, that between men among themselves; still, he adds, his course varied a good deal at different times. He remarks that the portion which treats of the congenital differences of races and people, he gives rather copiously, in which he makes use of collections of skulls freely, mentioning that in the anatomical museum, collected by Brugmans, and that of his respected fellow professor, G. Sandifort, who was always disposed to assist him. He then alludes to his own small collection, and says, that for more than ten years he had been gathering together drawings of crania and portraits of various races of people, of which he had then got many, and finally mentions his further projected writings upon anthropology. This sketch, or syllabus, extends to twenty-four octavo pages, and enumerates all the works by different authors on the matters treated upon in the various divisions of this great department of knowledge, with occasional quotations from eminent writers. It is a syllabus distinguished for the range of its subjects, and the completeness of its references, showing the accomplishment of its author, and how thoroughly he had entered into the grand study of anthropology. Van der Hoeven's historical remarks go far to prove that, if Holland were not distinguished by being the first country in which our science was publicly taught and cultivated, it came very closely after Hanover.

found leisure to carry it out, and to give his whole mind to so noble a study. Van der Hoeven was a sober and truly scientific Anthropologist; his writings relating to this science are marked with his usual characteristics, simplicity, and modesty. A keen perception of facts, which are always stated and described clearly, a full and correct estimate of what others have observed, an avoidance of speculation and hypothesis, in a division of knowledge in which the temptation to such seems to be especially alluring, a cautious and reserved deduction of conclusions only in cases in which the substantial evidence was sufficient. In truth, he took up Anthropological subjects on sound grounds, zoological and biological. He took them up as a matter of zoological science, and came to them furnished with every accomplishment natural science could supply. Viewing man as an animal, he could appreciate the minutest differences in the size, forms, colours, habits of the different races of mankind. The human cranium, especially, he described with the nicest accuracy, seizing all its marked features, measuring all its chief dimensions, but not going into those calculations of angles which others have supposed to be of so much importance. His generous estimation of the labours of others in this and in every department of science he cultivated was always obvious. Notwithstanding his opinions were fully formed, after deliberation, and decided, he differed where he was dissatisfied with the evidence, but had no proneness to the manifestation of the difference of his views, unless there arose an obvious necessity for such expression.

He dissented from developmentalism, we believe, decidedly; it has been said by Professor Welcker that, although he was sceptical upon the descendance hypothesis, he reserved himself expectant; but the readers of the well-argued exposition of his views, entitled "Some Remarks on the Succession and Development of Animal Organisation on the surface of our globe, in the different periods of its existence,"* would rather conclude that he had decided against developmentalism after careful and thorough investigation. A few sentences may be quoted from this Memoir in support of what has been said; he remarks:—

"There is a power of evidence which cannot be annihilated by our doubts, or by the difficulty of understanding the facts; and, in our researches on natural objects and phenomena, it is not fair to ask what we can explain before we see what we are obliged to admit by the authority of observation. The succession of new species of plants and animals on the surface of the earth seems to be a fact that can hardly be denied, although we cannot explain it. If we ascribe no unlimited duration to our planet, if we do not believe that it existed from eternity, we are compelled also to admit a beginning of organic bodies—an origin of life on its surface. However impossible it may be to explain the origin of organic bodies . . . this difficulty of explanation affords no reason to deny that there was a beginning" (p. 7).

"To avoid the difficulty of several consecutive creations, some writers have believed that the now living organic bodies originated by changes from those species of plants and animals which we consider to be extinct. No one, however, as far as I know, has given a detailed

* *Annals of Natural History*, September 1864.

and accurate account of the manner by which the different species which are commonly considered as extinct changed into the now living species."

"If we once admit such a mutability of species, we wander into the immense field of speculation, where reasoning, or rather imagination, must fill up the gaps left by actual observation" (p. 8).

"Such a view would require another distribution of fossils in the succeeding strata, so that, for instance, fossil cephalopods should be the latest of all mollusks, and not, as they really are, already represented in the oldest fossiliferous rocks. If the species have changed by degrees, we should expect to find traces of this gradual modification. If one form gave birth to another, why should we not find some fossils between mollusks, or insects, and vertebrata? Such a discovery has never been made."

"It is plain, if we are sincere and unbiassed observers, that geological facts give no support to those hypotheses we have been treating of, and that they rather militate against such theories, which cannot deserve the name of *natural* theories at all. Creation, the first origin of things, is, and perhaps always will be, a mystery; the mystery is by no means elucidated if we assume germs. The first animal, for instance, that possessed organs of vision, has to be derived from another without eyes. But why should such a supposition seem clearer and more intelligible than the creation of an entire animal provided with eyes? Here science does not shut her books, as it has been said by some; true science never opened books on such questions" (p. 13).

Dr. Salverda's testimony on his opinions upon this hypothesis is also distinct. He says, "Van der Hoeven more than once spoke out against Darwin's hypothesis;" and then quotes a letter of Van der Hoeven's written to himself, in which the former says: "Darwin's book, viz. his last work, *Variations of Animals and Plants in a state of Domestication*, I have not bought; I saw by turning over the leaves of the translation by Victor Carus all about the tame pigeons, &c., repeated and thought to myself, *non tali auxilio*."

But it is to his Anthropological studies that we should particularly direct our attention on the present occasion. Perhaps it may be advisable briefly to recapitulate his writings upon Anthropological Science. The earliest appear to be those communicated to the *Journal of Natural History and Physiology*, edited by himself and his friend Professor De Vriese. This Journal is not very accessible in England; there is a copy in the Library of the Linnean Society, but it is not quite complete. They appeared under the title of *Contributions to the Natural History of Man*, of which there were at least eight distinct Communications, extending from 1834 to 1839. Of these the III, V, VI, and VII are the only ones which have come into the hands of the writer; the III Contribution (1835) is entitled "Observations on the Negro Race in general, together with some measurements of the Bony Head of Negroes." This is to be regarded as the precursor of his larger work on the Negro Race, published eight years afterwards. After remarking that, "No race of men appears to be separated from the others by sharper limits than that of Negroes," he points out what

Soemmerring, Camper, Albinus, and Blumenbach had done to explain the anatomy of the Negro; refers to Jacob John Eliza Capitein, who studied theology at Leyden, and of whom a well-known portrait was taken; he soon reverts to the Negro cranium, comparing it with that of some quadrumana, and those of other races of men. The concluding portion of this "Contribution," which was most likely originally illustrated with plates of Negro skulls, is devoted to the measurement of ten Negro crania, from the collection of Sandifort.

The fifth "Contribution" (1836) has the modest title of "Something on the Chinese and Japanese, as types of the Mongolic Race of Man." After commenting on the languages of the two people, and pointing out the differences observed by Kaempfer, Thunberg, and Von Siebold between them, and, alluding to the origin of these nations, he turns to the physical constitution of the Chinese and Japanese, and takes up Blumenbach's description and those of De Guignes and Von Siebold. For a good instance of the Mongolic form of countenance and other characters of that division of mankind, he mentions the famous Siamese Twins, who had been exhibited in some of the cities of Holland a few months before. He describes the fold of skin in the upper eyelid, which descends towards the nose in the inner angle of the eye, with clearness, and points out that Rudolphi was not quite correct in attributing it to the soft parts solely; for the conformation of the bones surrounding the orbits stretches the skin in an unusual manner, and is the primary cause of the appearance which the soft parts exhibit. He then turns to a description and measurement of a series of skulls of both races, those of the Japanese derived from Von Siebold, as well as two of the Chinese skulls; the other Chinese examples from the Rijks Museum, and the collections of Brugmans and Reinwardt. Of one specimen of the skulls of each race he has added very accurate and well executed figures, in face and profile, with outlines of vertical views. He always considered it quite necessary to supplement the description of a cranium with such figures, which he always had drawn and lithographed in a very neat manner, highly creditable to the artists of Holland. This excellent paper concluded with an enumeration of the points of difference between the skulls of the two races.

"Contribution" number six is devoted to the "Measurement of the bony head in Europeans;" this article is intended as a supplement to those already enumerated on the Negro, Chinese, and Japanese; to afford the means of comparison with the measures of the skulls of those races already given. It consists chiefly of a table of means, derived from the measurements of five Russian skulls, five German, five Spanish, of one Italian, a Scotch, an English, and an Irish cranium, and need not detain us.

The seventh "Contribution" is devoted to the "Description of a Kafir skull." This fine example had been presented to him by a pupil from the Cape, and was that of a young man who died in the Somersset Hospital, and who was the son of "Pato," a Kafir chief, therefore, of unquestionably pure blood. This skull is very carefully described and measured, as well as compared with the only other figure of a Kafir-skull then known, that in Professor M. J. Weber's work on the

Cranium and Pelvis,* and with another example in the possession of Professor G. Sandifort, which was subsequently figured by him on a folio plate, in his grand work *Tabulæ Craniorum Diversarum Nationum*. To this "Contribution" a beautiful plate is added, containing the usual three figures of the Kafir skull described.

To this "Journal of Natural History and Physiology" Van der Hoeven also contributed translations of two other anthropological papers. One by Professor S. Nilsson, entitled "Contributions to the History of the Development of the Human Race;" the other by Professor A. Retzius, "on the form of the Skulls of the Inhabitants of the North," including that of the Swedes, of the Slaves, of the Finns, of the Lapps, of a Kalmuck, and of Greenlanders or Esquimaux.

In the *Annales des Sciences Naturelles* for August, 1837, appeared his essay "on the Dimensions of the Bony Head, considered in their relation to the Natural History of the Human Races," which is very much of an abstract of the "contributions" already noticed, referring to the skulls of Europeans, of Negroes, and of Chinese.

The next anthropological work of Van der Hoeven, in the order of time, was that on the Negro Race, the largest and most important essay written by him in this department of knowledge, but probably the least known. Its being in the Dutch language may account for this. It is a fine quarto of sixty-eight pages, with four beautiful plates. Its title is *Contributions to the Natural History of the Negro Race*.† In the preface the author refers to his papers in the *Journal of Natural History and Physiology*, speaks of his design to collect them together, to enlarge them here and there, to improve them as much as he could, and to issue them augmented with his later researches. This, on the Negro race, he gives as the first of the greatly enlarged and improved series, and says that it was difficult for him then to determine whether others should follow, which would partly depend upon the reception of the present. In case he issued others, he said, he could give a general title-page to the whole. We thus see more into the author's designs as a writer upon anthropology. Unfortunately for the science, as it afterwards came to the knowledge of the writer of this notice, this fine volume never attracted the attention it deserved. The introductory chapter is devoted to general remarks on the natural history of man, and the course which ought to be followed in this field of inquiry. In the opening paragraph he distinguishes anthropology from the natural history of man, which are sometimes, he remarks, confused. "The first is a science of spacious compass, and includes in its extended circuit the latter, which is an anthropological science, but is not anthropology itself." With regard to craniology, he asserts: "It is especially from a comparison of the skulls of different people that we expect the best elucidation, without on that account neglecting other indications of anatomical structure." And, in his estimate of Prichard's *Researches*, he alludes to this point again, saying,—"Upon the whole, it does not appear from this work that the writer paid much attention to the form of the skull and other

* Die Lehre von den Ur- und Racenformen der Schädel und Becken des Menschen, Tab. xvii.

† "Bijdragen tot de Natuurlijke geschiedenis van den Negerstam." 1842.

physical characters of the people, or that he in its preparation made use of collections of crania.*

The second preliminary chapter refers to the chief divisions of the human race. After this, the author arrives at the substance of his work, the Negro race, of which he gives very accurately the anatomical and other physical characters, followed by measurements of the skull. Next comes the subject of the measurement of the skulls of Europeans; and then investigations into the capacity of the Negro skull as compared with that of Europeans. This was the subject of Professor Tiedemann's famous memoir in the *Philosophical Transactions*, 1836. Van der Hoeven makes an analysis of this memoir of Tiedemann's, and shows that his tables give a mean of 39 ounces for the weight of the brain in the skulls of Caucasians; whilst in those of Tiedemann's Negroes the weight in the mean is only 37·8 ounces. Van der Hoeven thus proved, from Tiedemann's own materials, that the skull of the Negro in an average is smaller than that of the European; and that, therefore, the cerebral mass in the mean must be less. A conclusion which was quite at variance with the deductions of Tiedemann. Professor Welker, in his *Necrology*, quotes a passage from this part of the work to show the beautiful propriety of the Dutch language, which proves at the same time Van der Hoeven's great modesty and the power of truth over his mind. The fourth chapter refers wholly to the method of Professor C. G. Carus in the measurement of the skull, which he first described in his *Outlines of a New Cranioscopy founded on Science*.† The distinguished Professor Carus did not adopt the views of Gall, and look upon the elevations on the surface of the skull as indications of the development of a large series of organs in the brain beneath. He took the doctrine of Oken, that the skull is fundamentally the development of three vertebræ, as a basis, and attributed certain phenomena of the mind to the portions of brain contained in these three vertebræ, the psychical powers *to know, to feel, and to will*, and estimated the force of these powers by the volume of brain covered by each of these vertebræ respectively. His measurements were made to concur with this doctrine. It was a system of phrenology as well as Gall's system, but disencumbered of Gall's organography. Professor Carus's renown as a physiologist, to which may be added his great acuteness as a man of science and of taste, gave weight to his views, and, in accordance with this system, he has brought out some of his books, especially his fine *Atlas der Cranioscopie*, which has passed through two editions, and contains beautiful plates of the skulls, the casts, and the masks of many celebrated men and of others, life-size. He dissects the characters of all these people by his estimate of the relative proportions of the three primary divisions of the brain, which accord with the three vertebræ.‡ Van der

* In a letter, dated May 8, 1856, he says: "I recollect that making the personal acquaintance of Dr. Prichard at Oxford, in 1847, I found him utterly indifferent to all the cranial peculiarities of different nations." This is, probably, a little overstated.

† *Grundzüge einer neuen wissenschaftlich begründeten Cranioscopie*. 1841.

‡ Among the rest is a plate of the cast of the head of the notorious poisoner, William Palmer, of Rugeley, which is somewhat repulsive. Carus treats it as lending support to his views.

Hoeven, in this chapter, confines himself mainly to giving the measurements of his Negro skulls, according to Carus's method, and concludes that, by this process, it appears that the Negro possesses less *understanding* and less *feeling* than the European, but a strongly developed *will*, and with that a less development of the *sense of hearing*. He defers to a future time his further observations upon the system of Carus. His next chapter is dedicated to the Kafir people, and more particularly the Kafir skull; and the work is terminated with a long chapter "on the Geographical Distribution of the Ethiopic Division of Man." This chapter is marked by very numerous references to the descriptions of different African tribes, by the many travellers who had, at that time, visited the African continent—now so greatly multiplied by the number of more recent travellers. The four plates of this volume exhibit the usual excellence of those executed under Van der Hoeven's supervision. The first gives a portrait, in full face, of "Charles Gambous," a Negro of Sierra Leone, aged twenty-three years, and his profile in outline. The second, obtained through Professor G. Breschet, of Paris, represents the skull, in three points of view, of a *Makooa*, contained in the great *uncatalogued* collection of the Jardin des Plantes. It had been observed by Van der Hoeven on his visit to Paris, eighteen years previously, and more particularly so on account of its unusually acute facial angle, and the animal development of its facial portion. It is evident that, at that early period of his life, Van der Hoeven was an acute craniologist. The Makooas are a tribe which extends inland along the east coast, from the Zambesi to the Melinda; Barrow considered them to be Kafirs, but Salt regarded them as Negroes. An attentive study of an individual of this tribe, "Tatooah," a fine young man of about twenty-five years of age, who was in England a few years ago, leads to the conclusion that the Makooas are a people quite distinct from the Negroes of the west coast, and also from the Kafirs. Tatooah had no clicks in his language. Anthropologists should look with suspicion upon all such general terms as Negro. Livingstone speaks of the Makooas as being easily known by their tribal mark, which is something like a half moon on the forehead. It is really the half of a crescent, formed by two crescentic outline wheels. The extreme prognathism of the skull figured by Van der Hoeven was not present in "Tatooah," who, although prognathous, was not repulsive, and had acquired the soubriquet of "Pretty John." Plate iii affords three views of the skull of a Kafir. Plate iv is of much interest, as it gives in outline the profile portraits of two young Ashantee princes, who visited Holland, "Kwamin Pokoo" and "Kwassi Buachi." Besides which, this plate contains two figures of the hand of another Negro, which show that the fold of skin between each of the fingers descends down further upon the first phalanges than it does in other races. This copious account of Van der Hoeven's most important anthropological treatise will probably be accepted, as the book itself is scarcely known in England.

Probably the next writing of Van der Hoeven's belonging to our series is that "on the Skull of a Kafir," which appeared in the *Journal of the Netherlands Institute* for 1849. This has not come into our

hands, but is believed to be a more particular account of his own Kafir skull.

The next following production of Van der Hoeven, referring to anthropological science, is a memoir in the second part of the *Journal of the Netherlands Institute of Science*, Amsterdam, 1849. Its title is "on the Skull of the Kafir and of the Hottentot." In the commencement he acknowledges that he has been long diverted from continuing his observations and annotations on the natural history of man by other pursuits; and states that the scope of this memoir is to subject the extant store of skulls of South Africans, of Kafirs and Hottentots to a new comparative investigation. He bases his remarks upon five Hottentot and fourteen Kafir skulls. At the beginning he names Blumenbach and his *Decades Craniorum* with esteem, and attributes what is imperfect in the execution of his *Tabulæ*, partly to the times, which were unfavourable to more costly and more artistical plates, and partly also to the defect of the limited plan and piecemeal mode of publication, which was somewhat peculiar to Blumenbach, who was more active and lively than penetrating and persevering, as is more or less apparent in all his memoirs and scientific labours. "If Blumenbach himself had been a draughtsman, like our great Peter Camper, the value of these engravings to posterity would have been greater."

He describes the peculiarities of the Hottentot skull with minuteness, and mentions Barrow's comparison of these people with the Chinese, a comparison repeated by more modern observers, only to condemn it. After a similar close investigation of the peculiar forms of the skull of the Kafir, which, as he points out, differs in many respects from that of the Hottentot, the memoir closes with an elaborate table of measurements and of the means derived from the crania of both races.

Van der Hoeven made another communication to the same journal in 1851. "Description of two skulls of Guajiros," which had been brought him by a relative from the shores of the *Rio de la Hacha*, which runs into the sea on the northern side of a promontory in New Granada, not very far from the mouth of the great river Magdalena. The author particularises the forms of these two very rare calvaria, which agree closely with each other, and refers them distinctly to the Carib race. He also makes reference to two figures of Carib calvaria, that of Blumenbach's Table x, from the Island of St. Vincent, and that of Morton's Plate 64, a Carib from Venezuela, therefore, not very far from the district from which these Guajiros calvaria were derived. He speaks of this latter figure as agreeing remarkably with his skulls. It should be observed, however, that Morton, whose language is quite equivocal in this instance, appears to have regarded it as having been distorted. Judging from Morton's figure of this Carib calvarium, it seems to have undergone the process of frontal distortion to a slight extent. The great interest of Van der Hoeven's calvaria rests on the fact that they have not been distorted, but present the natural forms. He alludes also to a figure of a Carib calvarium in Gall's great *Atlas*, and mentions that, although he cannot receive the phrenological organography, against which he had often spoken, these two calvaria

exhibit elevations in the situations marked for phrenological organs. The memoir terminates with measurements and two plates, each of which presents two delineations of one of the two calvaria, the drawings having been made by the author.

In 1859 Professors W. Vrolik and J. Van der Hoeven conjointly produced a "Description and Delineation of a Human Skull dug up at Pompeii" (quarto, with two plates), which had been discovered in the presence of the Prince of Orange, and presented by him to the Academy of Sciences at Amsterdam. The skull belongs to the brachycephali of Retzius, and, although it is judged to have been that of a man between forty and fifty years of age, has the sutures so completely ossified and effaced as, coinciding with the general thickening of the bones, induced the authors to regard it as appertaining to that series of morbid crania—hyperostotic skulls,—examples of which have been described in different countries by Jadelot, Ilg, Wenzel Gruber, G. Vrolik, E. Huschke, and more recently by P. Gaddi, J. C. De Man, C. Murchison, and J. Barnard Davis. This Pompeiian skull exhibits only an incipient state of that thickening and hyperostosis which has attained such enormous proportions in some of the instances described by these authors. The morbid condition of this cranium precludes its being of much interest as illustrative of the skull-forms of the Romans who dwelt in the city, either before or at the time of the catastrophe by which it was overwhelmed.

In the same year, 1859, appeared in the Communications (Verslagen en Mededeelingen, 8vo) of the same Academy, his "Description of three remarkable Human Skulls, from the Rijks Museum of Natural History at Leyden" (two plates). The first of these examples is from Oonalaska, one of the Aleutian Islands; it is one of half a dozen brought by Dr. Mertens, of a Russian expedition (1826-29), from this island, the remainder being in the collection of the Imperial Academy of Sciences at St. Petersburg. One calvarium of these five has been delineated by Von Baer in his *Crania Selecta*, tab. 14, 15, 16. The cranium figured by Van der Hoeven is of great interest from its rarity, and from the probability that it represents the true skull-form of these rapidly decreasing people. It is brachycephalic, having a cephalic index of '83. The only figure of the cranium of an Aleutian Islander preceding the well-executed plate given by Van der Hoeven, is that in Choris's *Voyage Pittoresque autour du Monde* (1822), or the voyage of Van Kotzebue. This is very poorly executed, but Van der Hoeven says it presents in the whole form a great resemblance to the skull described by himself. Choris's skull is also brachycephalic, having a cephalic index of about '86. The calvarium figured by Van Baer is likewise brachycephalic, with an index of '84. Another example from a different island, Atcha, of which Von Baer has projected the circumference upon the vertical view of his calvarium is considerably shorter. So that there is every reason to believe the true cranial form of genuine Aleutian Islands to be decidedly brachycephalic; they have besides a low receding forehead, and are platycephalic. The circumference of Van der Hoeven's example is 515 mm., that of Von Baer's is less. Van der Hoeven quotes the description of these people by Von Langs-

dorff: "They are of a middle stature; the colour of the skin is dark brown. On the whole they appear healthy and strong, have a full round face, broad, level and flat depressed nose, thick, black and straight hair, black eyes. The beard of the men is very thin, because they pull it out as soon as it begins to grow. They dwell in pits, which are covered with a roof of earth heaped up on the top, upon which, if the hut has stood some years, high grass grows, so that a village looks more like a churchyard with grave hillocks. The daylight enters by small openings covered with seals' bladder or fishes' skin."

The other two rare skulls, included in this memoir of Vander Hoeven's, are derived from ancient mounds in the States of Tennessee and Kentucky in North America. They were presented to the Rijks Museum by a Dutchman, Dr. Troost, who lived at Nashville in Tennessee. This gentleman had already sent a mound skull from Tennessee to Morton, which is the subject of plate 55 of the *Crania Americana*. Like most of the mound skulls, these described by Van der Hoeven, one of which he figures, which is greatly elevated in the parietal region, are very brachycephalic. The cephalic index of one of them rises to '94; both are oblique, having the left side of the occipital region flattened. This is not noted by Van der Hoeven as an indication of artificial distortion, but there is no reason to doubt that it was produced by external influences in an undesigned manner. As usual there are two nice plates representing two of the crania half size, from the author's own drawings.

In 1860 Van der Hoeven published his *Catalogus Craniorum*, a work which stands at the head of those hitherto dedicated to this subject. His private collection was small, at that time extending only to one hundred and seventy-one skulls and thirty-nine casts, but it was highly prized by him, and contained a considerable proportion of rare specimens.* Since his death it is so much esteemed and regarded as a national treasure by his countrymen that they are already congratulating themselves that it is to remain in their fatherland whole and undispersed, for it has passed into the possession of his son.

The work extends to only sixty-five pages, although, speaking to Professor Welcker, he said of it: "It has cost me much pains," and contains a brief description of the anatomical appearances and form-peculiarities, to which are added the measurements according to the method he long practised, of each of his skulls. It is preceded by "Præmonenda," containing many interesting remarks indicating the zeal of the author as a craniologist, and his thorough acquaintance with and full appreciation of all that had hitherto been produced. The generous spirit in which he alludes to the labours of those who had preceded him throughout this work, is a correct indication of the feelings with which he was habitually actuated; even the humblest attempt to promote the science was not passed by without a word of commendation. From one occupying so elevated a position this com-

* In a letter, dated Oct. 18, 1859, he writes: "At your suggestion, I have made a catalogue of my collection of skulls. The first sheet is already printed. I have written this catalogue in Latin, in the hope that it may find some chance of large circulation abroad."

commendation was peculiarly gratifying, although largely attributable to the generosity of the writer. He stood too high in the ranks of science to allow himself, even where he most differed from others, to entertain a tincture of acidity towards them. Such, we may believe, were the natural results of his vast acquirements of knowledge and of his thorough goodness of heart. He felt the extent of Anthropological desiderata, and was anxious these should be supplied, recommending the use of all the arts and appliances of modern times for this purpose.

In the notes appertaining to this volume references are made to many of the preceding writers and to their figures. The general arrangement is mainly coincident with Blumenbach's five varieties. The catalogue commences with the skull of a gipsy, which he refers to an Indian race; alluding to the absence of figures of the crania of these wandering people, he says that Blumenbach's table xi is the only one he knows of. Although examples of gipsy skulls are now much increased in museums, this, to the present time, still remains the only solitary figured specimen. As has been previously said: "The conciseness, lucidity, and elegance of the very brief descriptions of this Catalogue, are the well-elaborated results of a mature observer."

As is the case with other collections of this kind, its amiable owner received fresh contributions to his stores every year. In 1861 he printed a "Short Account of some Human Skulls, with which my collection has been increased during the two last years." These additions then amounted to twenty-two specimens. Perhaps the most rare among them is a cranium of a *Battalander*. These are the civilised cannibals of Sumatra,* and those of two *Caroline Islanders*, which latter formed the subject of a memoir to be mentioned afterwards. Besides these, it is worthy of remark that he came into the possession of the skull of a *Mandan*, which was once Morton's.

It ought not to be passed over in silence that Dr. J. Van der Hoeven brought out two treatises in illustration of examples of skulls contained in his father's cabinet. The first refers to "deviations in the form of the nasal bones;"† he points to the cranium of a Bushman (No. 165), in which the *ossa nasi* are entirely absent; and that of a Guinea Negro (No. 134), in which there is an apparent defect of the left nasal bone, arising from the anormal obliteration of the suture between it and the frontal process of the left superior maxillary. He names other cases in which there appears to be only one nasal bone (No. 163); and, lastly, others in which the nasals do not reach the frontal.‡ Sketches of all these abnormalities are added from the accomplished author's own pencil. Some of these deviations are normal among quadrumanous animals. The other treatise of Dr. Van der Hoeven's is entitled "Description of two Human Skulls, deformed in consequence of premature synostosis of the sutures."§ The first (No. 159) is the skull of a young Kafir

* *Thesaurus Craniorum*. Catalogue of the Skulls in the Collection of J. Barnard Davis, p. 275.

† *Over afwijkingen in den vorm der neusbeenderen*. 1860.

‡ See *Thes. Cran.*, p. 208. *Bakele*, nasals absent, p. 209. *Osekanis*, one nasal bone.

§ *Beschreibung zweier, in Folge vorzeitiger Synostose der Schädelnähte verunstalteter Menschlicher Schädel*, Jena, 1861, quarto. The writer regrets that

woman, with early ossification of the left half of the coronal suture, and that of the suture between the edge of the occipital and the *pars petrosa* of the temporal bone, on the right side. The result is a great deformity, or obliquity of the calvarium. The second is a skull which was labelled "Cranium Virginis Noviomagentis;" it exhibits indications of having belonged to a subject labouring under congenital hydrocephalus, and is remarkable for the ossification of the coronal suture, whilst the frontal persists.

In 1861 appeared another memoir of Professor Van der Hoeven's, being a "Description of a Magyar and of an Esthonian Skull." This is accompanied with two beautiful plates, each of which represents one of the skulls in two aspects, half-size. This memoir opens with an exposition of the opinions respecting the history, origin, and alliances of the Magyars; and terminates with a comparison of the measurements of the two skulls with those of other peoples. He says, the general result of the inquiry appears to be that the relationship deduced from the comparative study of languages, between Magyars and other Finnish people, is confirmed by comparative craniological investigation. The skulls are both brachycephalic.

In 1861 also was issued his paper entitled: "Something on the Unity of the Human Race." This is written mainly with a view to make the readers of the *Dutch Journal of Medicine*, in which it appeared, acquainted with the writings of Flourens and Quatrefages upon this subject. The latter, especially, is a distinguished naturalist, who had the confidence of Van der Hoeven, and is the most active exponent of monogenism at the present day. Van der Hoeven does not express any very distinct opinion upon the question, but treats it in his usual fully instructed manner, as an accomplished inquirer. He is quite ready to admit the unity of the human race, but whether the race proceeded from one pair and one spot of creation; or, as he says, "we must admit of many other kinds of animals," was created in more than one place, he speaks as follows: "He who ventures on the hypothetical expression that it is an *impossibility* that man should have spread himself from one middle point over our earth, should remember that he must, at all events, support his position with proofs, for a naturalist like Quatrefages in our days has defended the opposite opinion. *The proofs it would perhaps be possible to furnish*, and it is better only to speak of the more or less *probability* of the one opinion or the other." In regarding it as possible to furnish the proofs of this diversity of origin, we must be at liberty to look upon Van der Hoeven as no decided opponent of polygenism. On the other hand, he must have considered the doctrine of diversity of origin as reasonable when applied to man; for, when applied to other animals, he was ready to admit it fully. His position that we ought to *speak* of this opinion as a probability only is clearly sound, in a matter where there are no grounds for demonstration.

this excellent memoir, with the six full-sized plates from the author's own pencil, should have escaped his attention, and should not have been referred to in the *Thes. Cran.* It ought to have been included in the "References," at p. 215, to the figures of Kafir skulls.

In 1862 there appeared in the *Album of Nature* a memoir on "Language and Comparative Philology, in connection with the Natural History of Man." Of this work the writer is obliged to say that he knows nothing.

It was in 1865 that his "Description of skulls of the inhabitants of the Caroline Islands" appeared. This somewhat more lengthened essay is illustrated in a manner quite agreeable to his notions, with figures half the size—a vertical, a facial, and a lateral view of the skull of *Taralipa*; and side views of that of *Taraloni* and of *Laepat*, the woman. The history of the way in which these very rare crania came into the hands of Dr. C. Swaving is given at length, and the author's reference of them to the Island of Wolia, which is in the Caroline Archipelago. This excellent and elaborate memoir, which embraces all the literature of these little-known islands, and their inhabitants, has already been made known to English readers by an article in the *Anthropological Review* (No. 13, April, 1866), therefore need not further detain us. It is one of the most complete essays descriptive of interesting and uncommon skulls which the author had such facility in writing.

In 1866 appeared his account of "A Negro Skull derived from an old Convent in South Holland." This short paper gives a notice of two ancient skulls which were found in 1839, in the foundations of the Augustine monastery, Eemstein, near Dordrecht, which was destroyed in the latter part of the sixteenth century. One of these skulls had very probably belonged to a Netherlander of that period. The other was of quite a different form and of different proportions. The author, after minute examination and comparison with the crania of Negroes, felt himself obliged to conclude that it was the relic of an African, for in all its forms and features it agreed with the Negro. Craniology enabled him to determine this curious point, but how the owner of this skull came to be reckoned an inmate of the monastery as one of the brotherhood it is impossible to surmise. Might it be as a domestic of the prior?

In 1866 also appeared his remarks entitled "A Word upon Anthropology and Ethnology." They are brief, and a translation of a few sentences will suffice to show the opinions he had formed. "So far, it appears to us quite obvious that *Ethnology* (Volkenkunde) cannot be equal in signification with *Anthropology*. It is, indeed, remarkable and almost inexplicable that during late years this should have been maintained in England. . . Undoubtedly *Ethnology* or *Ethnography* belongs to *Anthropology*, only as a part to the whole. The "*varietas nativa*," as Blumenbach named it in his famous dissertation, is a part of the natural history of man. A logical division of *Anthropology* I think gives occasion, in the first place, to only two great sections: *the distinction between man and animals*, and *the difference between man and man*, which last section may be named *Comparative Anthropology*. To this last belongs also (Volkenkunde) *Ethnology* or *Ethnography*, without its making up the sole scientific inquiry of the anthropologists in general, or even of the comparative anthropologist in particular." These remarks terminate with a classical expression he was fond of

using, and which was with him an active principle: "We think that it may be believed and hoped that many of our students will make their motto through life, even in a somewhat more extended signification, the beautiful words of old Terence:

'Homo sum, humani nil a me alienum puto.'

But it would be difficult to carry out the analysis of Van der Hoeven's anthropological writings so as to embrace the whole of them. One series consisted of brief sketches of books, under the names of "Boekaankondigingen" (announcements of books), and "Boekbeschouwingen" (views of books) for Dutch periodicals, etc., to which he constantly contributed notices of new books belonging to the vast range of natural history, anthropology, and many other allied subjects. He appears not only to have made himself acquainted with all new books in the different languages of Western Europe, but to have always read them with the pen in his hand, to note down their contents in a few short sentences for the instruction of his countrymen. Of anthropological announcements may be mentioned a notice of Prof. Welcker's *Growth and Structure of the Human Skull*, 1862. In this he mentions the examination of so many of the craniological collections of Germany by the author; and, after giving a tolerably full account of this important volume, concludes thus: "We wish the writer zeal and strength to go forward in this field of inquiry."—*Ethnological Writings of Retzius*, 1864. He compliments Gustav Retzius upon the judicious step he had taken in collecting together these productions of his celebrated father in one volume. *Synostotic Crania among Aboriginal Races of Man*, by J. Barnard Davis, 1865 (4to., 37 pp., xi plates). He ends by saying "the Dutch Society of Haarlem, by the issue of these *Contributions to Comparative Craniology*, has given a new proof of the liberality by which it so greatly distinguishes itself in the publication of useful and important writings, and has a just claim to the thankfulness of inquirers in the natural sciences." J. Barnard Davis *On the peculiar Crania of the Inhabitants of certain Groups of Islands in the Western Pacific* (pp. 25, iii plates). This notice is concluded in the following words:—"The Dutch Society of Sciences, by the publication of this treatise, has merited the thanks of all those who take interest in Anthropology and Comparative Ethnological Craniology, and the writer has by this communication furnished a new contribution to a better knowledge of the natural peculiarities by which the people of our globe are distinguished."*

This is to be regarded as an imperfect account of his writings, still, it will be sufficient to show that, although Van der Hoeven's fame rests so much upon other and different foundations, yet this investigation fully proves that he must take a position, as an able and zealous craniologist, in the same line as Blumenbach, Morton, and Retzius. His geniality and affableness as a man were not exceeded by any of these. Such qualities awoke the sensibility of his friends, and en-

* In a letter to the writer, speaking of these crania, he says: "I was very glad to see and examine those interesting skulls of New Caledonia and New Hebridean Islanders. Such I never saw before."

deared them to him strongly. His own sympathies in all their wants and feelings were constant. As we have seen, he was a diligent labourer and true to his own motto, and "worked as long as it was day." His very numerous productions show that he must have spent a large share of his time in his study, yet he was a great pedestrian. Like most of his countrymen, he was a constant consumer of tobacco, and was accustomed to read and write with the solace of a cigar. The appearance of the aged woman who used to open his hall door to visitors, conspicuous for Dutch cleanliness, bore testimony to the permanency of his attachments.

There are, at least, two large lithographic portraits of Van der Hoeven. One of these was taken by J. P. Berghaus, Leyden, 1849. It is a half-length, in his Professor's gown, and wearing one of his honours. He did not regard this as a good likeness, since it was taken on recovering from an illness. The other is a fine work of art and excellent likeness. It represents the Professor as he appeared at the best period of his life, in a similar dress. It was done by Groeneveld. It also well exhibits his most peculiar feature, that remarkable prominence of the eyes, which may probably be alluded to by the phrenologists, as he was so excellent a linguist. He had not the appearance of much delicacy, still he suffered from hæmoptysis whilst a student, and during the early years of his professional life. In May, 1867, this alarming symptom recurred. He interrupted his lectures at the commencement of the winter session, yet he felt most anxious to resume them. He was quite indisposed to relinquish work. On the 23rd of October he wrote, mentioning some books in the Russian language which had come into the hands of himself as well as of the writer:—"I am now rather too old for learning Slavonian languages :

‘Ο δὲ βίος βραχὺς.’”

He felt the cold of the winter weather keenly, and at this time occurred the death of his son-in-law Dr. Kingma. His letter to the writer announcing this sad event is dated 17 Jan. 1868, and exhibits unmistakable signs that the tears were flowing from his eyes as he wrote it:—"My dear friend,—I am sorry that I must tell you that I have lost my dear Dr. Kingma. He died the 8th of January, at the age of only thirty-eight years. My daughter bears her great loss with calm and pious resignation, and with great strength. I myself was and am ill, coughing, expectorating, and very feeble, and the illness of Kingma and his deplorable death has necessarily aggravated my indisposition. I feel I am not young, and that this, or a similar indisposition, may easily be the end of my life ; but now, at this time, I cannot but wish that I may be restored by God's goodness, and spared some years, if it be possible, for my daughter and other children. . . . In the whole city of Leyden there is the greatest sorrow. Kingma was, indeed, the most beloved of all physicians. He was very kind and charitable. His practice was daily increasing.”*

* This was in sad contrast to his pleasant letter of the same date, 1867, where he says: "We have here plenty of snow. It is a little scene of the glacial period in the diluvian time, but without mammoths, and the like, and without prædiluvian man."

Van der Hoeven's own illness, which, from the account he gives of it in this letter, was, without question, pulmonary consumption, went on increasing, and he died on the 10th of March, 1868, aged sixty-seven years. His son writes, on the 29th of that month:—"He knew his disease very well, and told me often that his disease was consumption. The last day of his life, when still up with us at the dinner-table, he said to me he was dying, but happy, having all his children round him. He died at eight o'clock in the evening, very calmly."

TITLES OF THE CHIEF WRITINGS OF PROFESSOR VAN DER HOEVEN
WHICH RELATE TO ANTHROPOLOGY.

1. DISTINCT WORKS.

Bijdragen tot de natuurlijke geschiedenis van den Negerstam. 4to., 1842.
Schets van de natuurlijke geschiedenis van den Mensch. 8vo. 1844.
Catalogus craniorum diversarum gentium. 8vo., 1860.

2. IN THE WORKS OF THE ROYAL ACADEMY OF SCIENCES, AMSTERDAM.

W. Vrolik en J. Van der Hoeven. Beschrijving en afbeelding van eenen to Pompeji opgegraven menschelijken schedel. 4to., 1859.

3. IN JOURNALS.

Ueber die Schädel Slavonescher Völker (mitgetheilt von Retzius). 1844.
Archiv für Anatomie und Physiologie.

Essai sur les dimensions de la tête osseuse considérées dans leur rapport avec l'Histoire Naturelle du genre humain. 1837. *Annales des Sciences Naturelles*.

Bijdragen tot de natuurlijke geschiedenis, van den Mensch. 1834. Dl. i, pp. 86, 247; 1835. Dl. ii, p. 356; 1837. Dl. iii, pp. 89, 116; 1837. Dl. iv, p. 262; 1839. Dl. vi, p. 247. *Tijdschrift voor Natuurlijke Geschiedenis en Physiologie*.

Over den Schedel van den Kaffer. 1849.

Beschrijving van twee Schedels van Guajiros. 1852. *Tijdschrift voor de wis- en natuurkundige Wetenschappen*.

Beschrijving van eenen Magyaren-en van eenen Esthlander Schedel. 1861.

Beschrijving van Schedels van inwoorlingen der Carolina-Eilanden. 1865. *Verslagen en mededeelingen der Kon. Akademie van Wetenschappen*.

Over de taal en de vergelijkende taalkunde in verband met de Natuurlijke Geschiedenis van den Mensch. 1862. *Album der Natuur*.

Een Negerschedel uit een oud Klooster in Zuid-Holland afkomstig. 1866.

Iets over de eenheid van de Menschen-soort. 1861.

Een woord over Anthropologie en Ethnologie. 1866. *Nederlandsch Tijdschrift voor Geneeskunde*.

Obituary Notice of Samuel Rule, M.D., F.A.S.L., etc., by John Shortt, M.D., Loc. Sec. A.S.L., and Langdon H. Down, M.D., F.A.S.L.—Dr. Samuel Rule was born at Kingsbridge, in Devonshire. His mother having married a second time to a Plymouth gentleman, that town became the place of his boyhood. He was at first placed with a Pharmaceutical Chemist of Plymouth; but his tastes and aspirations were not found to be in harmony with the drudgery of the business which fell to his lot. Instead of learning the scientific part of the business, he found himself only becoming acquainted with the mysteries of trade. Subsequently he was articled to a surgeon of the same town; and here he found that the student life, which he at once commenced, was in harmony with his wishes. At the end of his apprenticeship, in

1853, he entered as a student at the London Hospital, and matriculated at the University of London. He was a very intelligent and industrious student at the hospital, where he became a private pupil of Dr. Langdon Down, who was at that time the medical tutor of the hospital. He aimed to graduate in the University of London, and there is no doubt that he would have attained a high position in the honour-lists of that university, had not the occurrence of the Russian war induced him to leave, for a time, his studies, and volunteer as a medical assistant in the Baltic fleet. This gave him a longing to engage in the active duties of the profession he had chosen, and a taste for official rather than civil life. He hesitated to give the time which the highly honoured degrees of the University of London necessitated; and having passed the examination at the College of Surgeons, he went to St. Andrew's to graduate, justifying, however, the hopes that were entertained of him, by taking the highest position in the examination for honours which that university had then, for the first time established. He then turned his attention to the medical service of India, and he speedily obtained an appointment, by taking a high position in the competitive examination of 1858. He at once married, and was stationed in the Madras Presidency, and served with several regimental and other departments for some time, and eventually obtained the Civil Surgeoncy of Madura, where he had been some two or three years, and was much esteemed by, and popular among, Europeans and natives, as a kind and able medical practitioner. His health, however, giving way from the arduous nature of his duties at that large station, he exchanged to the smaller civil station of Chittoa, where, when he had been residing a short time, a dog belonging to one of the officers was sent to him for treatment. Dr. Rule, with his usual kindly nature, approached the animal incautiously. The dog sprang at him, and seized him by the nose and upper lip, and had to be strangled to make him let go his hold. In three or four days, symptoms of hydrophobia set in, which proved fatal to Dr. Rule in forty-eight hours from the manifestation of the first symptoms.

Dr. Rule had not written on Anthropology. He was, however, greatly interested in the natives of India; and it is probable that, but for this unfortunate event, the science in which recently he had taken great interest, would have been advanced by his labours.

The President then delivered his Address from the Chair, as follows:—

ANNIVERSARY ADDRESS,

DELIVERED BEFORE THE ANTHROPOLOGICAL SOCIETY OF LONDON,
JANUARY 19TH, 1869.

GENTLEMEN,—Having two years ago delivered to you a farewell address, as your President, and having then given my views respecting the future conduct of the Society at some length, I only now propose to say a few words.

The past year has been an eventful one, in many respects, to the Society. The financial difficulties of the Society, which pressed rather

heavily on you two years ago, have, during the past year, become very much easier.

We have to congratulate ourselves that our income, in 1868, was fifty pounds more than in 1867. This is so far satisfactory ; but we cannot also hide from ourselves that we have this year lost a considerable number of members by resignation. The rigid system of economy practised by the Council, in printing, has had an injurious effect, in so far as we have lost many members on account of the non-publication of *Memoirs* or translations ; and for the same reason we have not had such an increase in the number of our new members as in former years. I know not what may be the policy by which, in future, the Council will meet these difficulties ; but there can be no doubt that these subjects will require very serious consideration during the coming year.

During the past year, I fear, we cannot congratulate ourselves that any great amount of scientific work has been effected. Nor can we direct your attention to the publication of important works on Anthropology. We may, however, perhaps turn our attention for a few minutes, with advantage, to a subject which has caused considerable discussion during the past year, viz., the question of an amalgamation with our brother students,—the Ethnologists. I feel it my duty not to leave the chair this day without stating, however briefly, my regret that the negotiation, commenced last summer, did not terminate successfully. I have always been of opinion that it is most desirable that a union of the students of the science of Man should be effected. On being assured in the summer that such a union could only be carried out by accepting some new title, I very reluctantly acceded to this request. The title selected was, however, thought to be absurd ; and, although the proposer of it, I could not but admit that it was open to serious and, as it proved, to fatal objections. Notwithstanding all these difficulties, and the unpleasantness which has arisen from a failure of the negotiations, I still entertain a very decided opinion that, on scientific considerations, it would be highly desirable that all the students of the science of Man should be united for the furtherance of our great and most comprehensive science.

Holding, then, these views, I feel it incumbent on me to say on this occasion that I, for one, shall, in the future, be ever ready to lend my aid to any scheme having for its aim the promotion of the original objects of this Society. It is because I believe that the union of the students of Man-science is desirable, that I have advocated, and shall continue to advocate, a union of the Fellows of the Ethnological Society with ourselves. At the same time, I cannot but express my regret at the obstacles which were raised to such a union being effected. In the future, we can only go into this question on its scientific merits. Two questions arise,—first, What organisation is the best for carrying out the objects we have in view ? and second, What is the best and most appropriate name for such a Society ? I believe that our own organisation would form a suitable basis for a united society of all the students of the Science of Man. With regard to the name, it does not appear to me that we need give our-

selves much trouble about that. We all know perfectly well that there is but one name by which such a Society can eventually be called. I am not here to justify the means by which I proposed, last summer, to effect a union; but I wish most strongly to insist on the desirability of the union of the Fellows of the Ethnological and Anthropological Societies. While I say this, I would desire to add, that the union can alone be lasting and effectual by negotiating it on a purely scientific basis.

I feel it necessary to express these views; because I know that other feelings animate some of my colleagues, not only in the Council, but amongst the Fellows of the Society generally. There are some who say that our finances would be injuriously affected by such a union. This, if true, would no doubt be an objection of weight; but as the diffusion of science, and not the accumulation of wealth, is our object, this objection may, perhaps, be overcome, if we have only the inclination to do so. But there is a more frequent objection continually heard, viz., that by a union of ourselves with the Ethnologists of this country, the character of the Society would be changed. These views are, I believe, entirely erroneous, and arise from a mistaken notion of the real objects both of our own and of the Ethnological Society.

Six years ago, when I delivered the "Introductory Address" before this Society, I then laid down what was proposed to be done; viz., to found a really scientific Society, for the general enlightenment of the public, by the accumulation of facts, and by the publication of the same, together with other literature on the subject.

After six years' labour in behalf of these objects I wish to say that I see nothing to change in the views I then laid down. There are now, I believe, a considerable number of Fellows who think that one of the objects of this Society is the diffusion of infidel opinions; let me, therefore, here remind every Fellow that our object is not the diffusion of scepticism, but the progress of science. It would, indeed, be not only a misfortune, but fatal to this Society if such views were generally entertained; I, for one, could never be a party to the original objects of the Society being so prostituted that it should become the theatre for the display of blasphemous opinions, or for the diffusion of any set of ideas, whatever they might be. The Anthropological Society was not founded for the promulgation of special views, or opinions, respecting any scientific or other question. Our past history and publications attest how loyally these views have been carried out. If one set of opinions has appeared at any one time to be predominant, that has been purely the result of individual feeling and influence.

Let, therefore, those who hold the opinion that our object is to be any other than that of the diffusion of science, at once banish such notions, for I feel sure that the general good sense of the Fellows will not allow the original objects of this Society to be so departed from.

Let our future be what it may, we can only exist and flourish by adhering closely to our original objects.

In my past connection with this Society I have always endeavoured

to impress this on my colleagues. It has always been my aim to have a representative of every scientific opinion in the Council, so that there should be no exclusive views advocated or encouraged. Those interested in this subject have only to look at the past lists of our Councils to see how this design has been carried out.

As I now resign all official connection with the Society, it must be left to others to see that the Council is never allowed to become a clique for any objects other than those originally contemplated, the success of which has up to this time been, on the whole, so satisfactory.

Properly conducted, this Society has a great future before it, and will not fail to do an immense amount of good. If, as I believe, the real objects of the Society are praiseworthy and beneficial to the community generally, then it behoves all real lovers of truth and science to come forward and help us. If we only continue to preach and practise the diffusion of science as our sole aim, we need not be afraid of any difficulties with which our path may be beset.

If this Society is to flourish it can only be by doing good scientific practical work. We have yet to raise the character of our papers and discussions to an equality with those of our brother students in France or Germany. There must ever remain great diversity of opinion in a Society like our own, but we can all unite, even with those with whom we differ, in the object common to us all—the diffusion of truth, be it acceptable or unacceptable to the world at large.

Mr. PIKE said he wished that some one else had risen to do that which, he was sure, every gentleman present would agree with him ought to be well done, to propose a vote of thanks to Dr. Hunt for his farewell address. He felt himself to be in every way quite unequal to the task; but consoled himself with the reflection that, however little he might say, and however badly he might say it, he could not alter the feeling of the meeting towards Dr. Hunt. He did not think it necessary to comment on the various points put forward in the address; but that portion of it in which the charge of encouraging infidel opinions was denied would, he thought, meet with universal approval. It was a calumny to say that the Society, as a Society, entertained or encouraged any one set of opinions more than an other. It afforded an arena for the free discussion of scientific facts and theories. The papers read before it sufficiently proved that there was not the least desire to suppress any side of any question. Dr. Hunt's conduct in the chair had always been characterised by the strictest impartiality, and had often obtained a hearing for persons whom a less indulgent or a less honest President might have put down with the general consent of the meeting. It was not, however, of Dr. Hunt's conduct, as President, that he wished to speak; for he had no doubt that a special vote of thanks, for that past conduct, would be moved by some more competent person than himself. He only desired to endorse Dr. Hunt's vindication of himself, as one who was incapable of wantonly outraging the susceptibilities of earnest believers in any religion; and to express his agreement with the proposition, that a

Society, founded with the object of discussion, could not, as a whole, entertain any opinions upon any subject whatever.

The Rev. Dr. KERNAHAN seconded the resolution. He said he wished to do so as a Christian minister. He had listened to the Address, as to all that came from their excellent President, with much interest. He was especially gratified with that portion of it which related to the charge of infidelity,—a charge which, in some quarters, is still being made against the Society. Indeed, he himself had been treated with suspicion, because of his connexion with the Society. Now, he wished publicly to say, that he had attended the meetings for a considerable time, and had paid close attention to the papers read, and the discussions which followed, and, while the utmost liberty of opinion and speech had been maintained, he had never heard a word offensive to Christian faith or life. It should be understood, as the President had expressed it, that we do not associate for the maintenance or promulgation of any particular theory. Our object is to ascertain the truth, so far as it can be known, by scientific induction, concerning the nature and history of man,—of man in all his relations and interests. We have no selfish end or purpose to serve. We are seekers after truth. And as we believe in the harmony of all truth, we have no fear. Truth is mighty, and must prevail; but in all ages of the world it has had to combat with selfish ignorance and superstitious bigotry, and we must be prepared for our share of hostility from those quarters. From what he had seen of the Society, he felt sure there were none amongst them who would treat any man's religious opinions with discourtesy, or intentionally utter a word to offend the faith of any man, be he Turk, Jew, or Atheist. He most cordially seconded the resolution.

Carried unanimously.

Mr. J. GOULD AVERY said he had great pleasure in proposing a vote of thanks to Dr. James Hunt for his services as President. Dr. Hunt, during the last six years had won great popularity amongst all the Fellows of the Society, whatever might be their personal opinions, and he had left to his successor in the Chair a body of scientific workers that was not surpassed for devotion to their favourite study by any other in the kingdom. He (Mr. Avery) believed that the Society had a bright future to look to. Anthropology was growing rapidly in the estimation of the public; and when that public was made more fully aware of the importance of the researches which it was the aim of the Society to carry out, he felt sure that large and ample support would flow in. He would congratulate Dr. Hunt on the great achievement of not only founding, but establishing, a most important Society over which any man might be proud to preside.

Mr. PINKERTON seconded the motion, which was carried by acclamation.

The PRESIDENT briefly replied.

Mr. F. MONTGOMERIE moved, and Mr. LEWIS seconded a vote of thanks to the Director. Carried.

Dr. SKUES proposed and Dr. DONOVAN seconded a vote of thanks to the Treasurer.

The DIRECTOR and the TREASURER acknowledged the compliments.

The thanks of the Meeting were also accorded to the Vice-Presidents and Council for their services during the past year.

On the motion of Dr. BEIGEL, seconded by Mr. GEORGE HARRIS, the thanks of the Society were given to Mr. J. Gould Avery and Mr. J. Epstein for their services as auditors of the accounts for 1868.

The Scrutineers of the Ballot then brought up their report as follows:—

OFFICERS AND COUNCIL ELECTED TO SERVE IN 1869.

President—Dr. John Beddoe. *Vice-Presidents*—Sir Duncan Gibb, Bart., Dr. J. Barnard Davis, F.R.S., Dr. R. S. Charnock, L. O. Pike, Esq., T. Bendyshe, Esq., Dr. H. Beigel. *Director*—E. W. Brabrook, Esq. *Treasurer*—Rev. Dunbar I. Heath. *Ordinary Members of Council*—H. G. Atkinson, Esq., J. Gould Avery, Esq., A. Bendir, Esq., S. E. Collingwood, Esq., W. C. Dendy, Esq., Dr. Langdon Down, Dr. P. M. Duncan, F.R.S., C. Harding, Esq., George Harris, Esq., Dr. R. King, Major S. R. I. Owen, E. Peacock, Esq., Captain Bedford Pim, C. Robert des Ruffières Esq., Dr. Berthold Seemann, W. Travers, Esq., W. S. W. Vaux, Esq., F.R.S., C. S. Wake, Esq., Cornelius Walford, Esq., Dr. A. Wiltshire.

Sir DUNCAN GIBB, Bart., moved a vote of thanks to the Scrutineers.

In seconding the vote to the Scrutineers, Mr. DENDY referred to the papers of Dr. Hunt in the last review. In the middle of the fifteenth century Magnus Hundt first adopted the term anthropology, and indicated the locality of faculties in the brain. The mantle of his name-sake has fallen on our learned president, who is now devoting his mind to the study of the noblest elements in the physiology of man. Versed in the ancient notions of Vesalius and Chanet, he has diverted attention from the superficial craniography of Gall to those deep and intricate tissues that lie along the basal centre of the encephalon in intimate connection with the ultimate fibres of the sensory and motor nerves. In retiring from the absorbing duties of the presidency, and with renewed health, the Society may hope that Dr. Hunt will be enabled more especially to devote his attention to the elucidation of the science of the intellect of man, the most important chapter in the study of anthropology.

The meeting then separated.

FEBRUARY 2ND, 1869.

Dr. BEIGEL, M.D., Vice-President, in the Chair.

The Minutes of the last Ordinary Meeting were read and confirmed.

The following were elected: *Fellows*—Vavasour Joseph Lane, Esq. Assistant-Surgeon, 4th Foot, Dover; Moncure D. Conway, Esq., 51 Notting Hill Square; J. Macrae Moir, Esq., Pump Court, Temple. Alexander Moir, Esq., Temple.

The list of presents to the Society's Library was read as follows:—

FOR THE LIBRARY.

- From the CANADIAN INSTITUTE—The Canadian Journal of Science, Literature, and History, vol. xii, No. 1.
- From the EDITOR—The Medical Press and Circular, to date.
- From the AUTHOR—R. B. Foote, Esq., F.G.S., On the Distribution of Stone Implements in Southern India.
- From W. PINKERTON, Esq., F.S.A.—The Philosophy of Natural History, 2 vols., 4to, W. Smellie, Esq.
- From the SOCIETY—Proceedings of the Royal Society, November 1868, Nos. 106 and 107.
- From the AUTHOR—Dr. Michael Sars, Des Crinoides Vivants.
- From the UNIVERSITY ROYAL CHRISTIANIA—Officielle Statistik; Gaustad, Spedalske Sundhedsstilstanden.
- From the AUTHOR—J. G. Macvicar, D.D., A Sketch of a Philosophy; Part I, Mind.
- From the AUTHOR—M. L. Lartet, Mémoire sur une Sepulture des Ancieno Troglodytes de Perigord.
- From T. HUNT, Esq.—Juvenile Crime, its causes, character, and cure, by S. Phillips Day, Esq.
- From the ACADEMY—Sitzungsberichte der Academie zu Wien, philos. hist. Classe; band 57, heft 2, 3; band 58, heft 1, 2, 3; ditto for 1868; 1 Abtheil, Nos. 1, 2, 3; 2nd Abtheil, Nos. 1, 2, 3; Almanach der Akademie der Wissenschaften, 1868.
- From the ACADEMY OF DRESDEN—Vereins für Erdkunde; iv and v Jahresbereit, Dresden.
- From Dr. SOPHUS RUGE—Ueber compas und compas Karten.
- From the AUTHOR—J. M. Winn, M.D., On the Nature and Treatment of Hereditary Disease.
- From the SOCIETY—Proceedings of the Geological and Polytechnic Society of the West Riding, Yorkshire.
- From J. W. KAYE, Esq.—Reports of Lectures on Class Morality, J. W. Fox, Esq.
- From the SOCIETY—Bulletin de la Société Impériale des Naturalistes de Moscou.
- From T. BENDYSHE, Esq.—My First Book of Science, Rev. Dr. Brewer.
- From the ROYAL INSTITUTE, Palermo—Giornale di Scienze Naturali ed economica, vol. iv, fasc. 1, 2, 3, 1868.
- From Dr. H. BEIGEL—Metrik, 2 vols.; Transactions of Zoological and Botanical Society of Vienna; Classification of Strata, Dr. Ferdinand Senft; On Epilepsy, Reynolds ed. Beigel; Uterine Surgery, M. Sims, ed. Beigel; History of Russia, 4 vols., August Kotzebue; Political Encyclopædia, 5 vols., Rotteck u. Welcker; Anthropology of the Senses, H. Böhmer; Die Grenzboten, J. Schmidt; Journey to London, Roux; Principles of Education, A. H. Niemeyer; Medico-Chirurgical Review, 2 vols., Johnson; Polytechnic, 8 vols., Hülse and Weinley; History of the City of Frankfort, G. Lange; Principles of a Science of the Soul, F. Vorländer; De Curandis Hominum Morbis, 8 vols., J. P. Frank; Anatomy of the Human Body, Dr. Winslow; Transactions of the Society of German Naturalists, Dr. Gröser.

From the SOCIETY—Bulletins de la Société d'Anthropologie de Paris, III, IV.

From the SOCIETY—Prospectus of the Ethnographical Society of Paris.

From Dr. CARTER BLAKE—Compendio de la Historia, Geografica, natural y civil, del Reyno de Chile, by Ignacio Molina; Spanish translation, with complete vocabularies.

Thanks were given to the donors, and the special thanks of the Meeting were voted Dr. Beigel and to Dr. Carter Blake for their very valuable contributions.

Some flint arrow-heads and North-American Indian pipes, found in Kelby's Island on Lake Erie, were exhibited, some of which had been presented to the Society's Museum by the Rev. J. G. Wood, who communicated the following Paper relating to them, by Mr. Stirling:—

The three arrow heads from Kelby's Island, Lake Erie, are the last of a great number taken from under a large surface stone, where they were undoubtedly secreted by Indians at some very remote period, as the main root of a white oak tree counting five hundred and eighty-five concentric rings, entirely overgrew the stone. The locality was adjoining a lime stone quarry, the surface of which was being cleared in order to extend the works. The stone, a large flat one, weighed three tons and a half, by measurement, and required the united efforts of several men in its removal. The arrow heads were found strewed evenly under it, and varying in size from half an inch to five inches in length, and, without a single exception, well formed and perfect in workmanship as the specimens sent you; the entire collection filled a peck measure "heaping full." On the south side of this island is an ancient Indian earthwork (fortification) inclosing ten acres, but now under cultivation, from this space cart loads of stone implements have been removed—such as chisels, mauls, mantan, pestles, sinkers for fish nets, &c., &c. Within the two lines of earth works on the shore of the lake, is situated the celebrated "Inscription Rock," described by M. Schoolcraft in his work on the *North American Indians*.

The original cast of pipe, in the form of a falcon, perching, from this island, was found last summer under three feet of soil and clay, and is much weather worn. The material of which it is made is the Tennessee lime stone, and represents the white owl (*Strix arctica*, Bartram), a bird often found as far south as the Ohio River, in very severe winters. The pipe is the work of the ancient "mound builders," an agricultural peaceable race, once inhabiting the valleys of the Ohio and Mississippi Rivers, and, I believe, a northern offshoot, or migration, from the Aztecs of Mexico. In the Ohio valley their works extend no further north than the southern portion of this state. Consequently, the pipe, without doubt, found its way to this locality at the hands of some marauding Indians; it was these "northern barbarians" that finally drove their less warlike and semi-civilised people from the country, and herein may be the origin of the tradition common among the people of Mexico at the time of its invasion by Cortez, that "their people came from the north;" this remarkable event being the most ancient of their traditional history.

The heart-shaped pipe was formed from a fossil shell, common to the cretaceous deposit of the Gulf States ; it was found near one of the Aztec mounds in the state of Mississippi ; but little labour seems to have been spent upon it, save the hollowing for the bowl and stem, unless it be the ridge and horn-shaped depression on top, it is undoubtedly the work of the "Common Indians," those of the mound builders being invariably made to represent some animal, generally rare, or of extraordinary and marked appearance, with an extremely small bowl, as shown in the bird pipe. The pipe in question had been well used by its original owner, but the weatherworn marks existed previous to its transformation, as is readily seen on an examination of the original.

I send also an arrow head which I found some time ago in Northern California ; from appearance I do not think it belongs to the present period, although the Indians of that region (the Pit River, Klamath) at the time of my visit, used wholly the stone arrow head, both of flint and obsidian. We often saw them while manufacturing this weapon, which was done with great facility.

The Rev. DUNBAR HEATH inquired whether similar instruments were found in China, and whether there was anything in the finds of the two continents of Asia and America to indicate the origin of races.

Dr. CARTER BLAKE observed that one reason why black flints would be used by all savage natives was that they afforded when fractured the most handy knives that could be procured. In Central America the natives of the Rio Frio district use a cutting instrument of black flint that must have been brought from a distance of at least four hundred miles, for there is no chalk deposit from which such flint can be obtained at any nearer place. Now such a fact supposed either a certain amount of migration or of commerce. A similar fact was observed by M. Dupont in his researches in the Belgian bone caves. He described certain flint and chalcedony instruments in the caves of the reindeer period, which kind of chalcedony is not to be found either in Belgium or in Germany, the nearest point from which it could have been obtained being the south of France. There must have been, therefore, a migration from the south of France to Belgium, or there must have been commerce between the two countries. In confirmation of the latter supposition, there were found in Belgium fossil shells from Aquitaine that had been threaded by Belgian cave-diggers and worn by them as ornaments.

Col. A. LANE FOX said that the arrow-heads used by the North American Indians differed little from those found in Europe. Except that in one variety known as the barbed form, the tang of the North American arrow-heads was usually broader and the notches more towards the side than in the European specimens. There were four types of them, the leaf-shaped, the lozenge, the barbed, and the triangular. All four, and the intermediate links connecting these types with each other, were found in North and South America, in Europe, and in Japan, but he believed not in India.

Dr. CARTER BLAKE said the arrow-heads did not differ from those described by Dr. Fairbank in 1865, and the pipes were of the ordinary form of the pipes of the American Indian mound builders.

A paper, of which the following is an abstract, on "Cleveland Gravehills," contributed by the Rev. J. C. Atkinson, was then read:—

"The moorland districts of the valley of the Esk, lying to the west of Whitby, at between eight and sixteen miles distance, are thickly studded with burial mounds, or barrows, or in the old Danish country vernacular, "howes". Many have been destroyed; but of the larger ones which yet remain, a large proportion had been examined by the author. He obtained forty-five urns, and evidence of more than one hundred interments after cremation; but not any trace of metal. In some of the larger mounds, evidence appeared of three successive interments,—the first in the centre; the second, inserted at a distance from the centre, and rudely and violently misplaced to make room for a third, due to an intrusive, perhaps a conquering tribe. The author of this paper (which will appear at length in the *Memoirs* of the Society) was of opinion that the whole of the remains belong to an extremely remote period."

The following paper by Mr. Peacock was then read:—

"On the 6th and 8th of November last I was invited by Matthew Maw, Esq., of Cleatham Hall, near Kirton-in-Lindsey, Lincolnshire, to examine a barrow on his estate. Cleatham is a hamlet in the parish of Manton; on the sand hills in the latter place several relics of Celtic times have been discovered. No early remains are known to have been found at Cleatham. The place first appears in history in the *Domesday Survey*, where we are told that the Abbot of Peterborough had a manor there. This manor was afterwards subinfeudated to the family of Bussey, of Hougham and Scotton. It is now the property of the gentleman on whose estate the barrow is situate.

"The mound we opened stands in a grass field adjoining the highway leading from Kirton-in-Lindsey to Messingham. The field has some time or other been under cultivation, as it is marked by ridge and furrow. It has been pasture land during the memory of the oldest inhabitants. The dimensions of the hill could not be taken with strict accuracy, as in former times rabbits had burrowed in it, and the trenches made by rabbit catchers had, in some parts, injured its contour, and had also probably somewhat lessened the height and widened the base. The measurements before the work began were:—Length of base from north to south, 114 feet; length of base from east to west, 75 feet; central depth, 9 ft. 6 in.

"Almost in the centre of the hill, at a depth of 9 ft. 6 in., the excavators came upon the level platform on which the hill had been built. Here were the remains of a large fire. The charcoal was quite fresh, so that the grain of the wood used could be distinctly seen. The chief materials of the fire had been the branches of oak trees, there were some few bits of ash charcoal among them. This fire had been employed to consume a human body. The whole of the *débris* was full of burnt bones, but they were so much calcined that it was not possible to identify any of them except two vertebæ, a few fragments of ribs, and a lower jaw. This last crumbled to pieces as soon as touched. In the midst of these relics was an inverted urn filled quite full of charcoal. No bones seem to have been purposely placed in

this vessel. Its contents were most carefully examined: they were found to consist of burnt wood only, with the exception of one small splinter of bone, not more than a quarter of an inch long. The charcoal had been pressed down very firmly by the hand or with a rammer. At 42 ft. from this, in a direction due south, another urn was found, at a depth of 3 ft. 6 in. It was standing on its base; there were no traces of fire around it; the mouth was uncovered. Its contents were calcined human bones mixed with charcoal tightly rammed down. All the bones were in very small fragments. One bit of the upper part of the skull was the only particle we could identify. It was sufficient to show that this

‘Unknown tenant of the sepulchre’

had died in youth. The coronal suture had never united.

“At 82 ft. northward of this, and at 40 ft. from the central fire the diggers came upon another urn almost exactly similar to the last; this also was standing upright, uncovered, without any marks of fire near it. The contents, which were hardly pressed down, consisted of calcined bones and charcoal. None of the pieces, after the most exact scrutiny, could be identified.

“I believe the urns to be Celtic. I am sorry to say that they all fell to pieces when removed from their places, so that no drawings could be made of them. Pl. i, No. 3 of the *Journal of the Archaeological Association* for 1850, represents a vessel of similar type to these. The Cleatham ones were, however, somewhat narrower at the mouth. The southern one had no pattern on it, the central and northern ones had a slight indented ornament on their rims (somewhat thus IIII). They had not been decorated with the same instrument.

“About one-fourth of the mound was turned over, but I am by no means sure that the proper depth was reached in many parts.

“The sites of many fires were come upon, but no bones. Had these fires been burned for a religious purpose, in honour of the dead, in worship of God, to avoid misfortune, to pacify the manes of the departed, or were they the remains of burial fires belonging to the urns buried in the vicinity which we did not find?

“No other relics of any kind were turned up except a few chipped flints, *not* knives or spears, which may, perhaps, have been used for the purpose of procuring a light; and two bits of badly smelted iron. These last, I think, as they were near the surface, had been brought there in recent times. If not, they may, perhaps, have been used, as I have suggested the flints were, for the purpose of kindling a fire. The most interesting part of the excavation was not the discovery of the burial relics, but the light that it has thrown on the manner in which sepulchral mounds were formed. Antiquaries have long known that the materials of which these hills—or, at least, the earlier of them, were formed must have been carried in baskets or panniers. No proof of this has, however, as far as I know, yet been given. The barrow diggers at Cleatham had, however, ocular demonstration proof of this furnished to them. The hill stands on a rising ground sloping

to the south ; in the valley runs a little stream. It is probable that from the sides of this brook the materials of the mound were procured.

“It was composed entirely of sand without stones in it, and this sand was of various grey and brown tints, shading off to red and white. When a section of the hill was made from east to west each basketful of sand could be distinctly traced, even the side on which the person stood who threw it down could often be made out from the slope that the fallen burden had taken. As almost every basket had a different coloured sand in it, the effect produced was like the mottling of marble. It is proper that I should mention that one of the persons engaged in “the diggings” said that it was evident that children, as well as grown-up people, had been employed in carrying the sand, as some of the heaps were very small. This, I think, is not proven. As the heaps would not be thrown down regularly, it is evident that while some of them would be cut through the middle, and thus shew the largest section possible, others would be cut at the margin only, and thus seem much less than they really were.”

Thanks were given to the author of the paper, and to Mr. Maw for permitting the exploration.

A paper on “a Kjökken-mödding in the Island of Herm,” was then read :—

Notices of a Kjökken-Mödding in the Island of Herm.

By J. W. FLOWER, F.G.S.

In laying before the Society some account of a Kjökken-mödding, which I have lately explored in the Island of Herm, I do not apprehend that the particulars which I have to communicate will be found of great importance, yet I venture to hope that they will not be devoid of interest, inasmuch as they relate to a people which, so far as we know, left no other traces of its existence, and they also bring down the Kjökken-mödding period (or, at least, this particular kjökken-mödding), to a much later date than has hitherto been assigned to it in Europe, and it thus constitutes a link between historic and pre-historic times.

The Island of Herm is one of those known as the Channel Islands. It is situate between Guernsey and Sark, about three miles east of the former island. It is now the property of Mr. John Hyde, and it was by his permission that I examined the deposit in question in the summer of last year.

The kjökken-mödding is situate on the western coast of the island, opposite a rock known as Rat Island ; it is about ten feet above high water mark, and at the base of a considerable hill ; it now extends, in length about sixty feet, in depth from three to four feet ; its breadth has not been accurately ascertained by reason of the great accumulation of earth which has fallen from the overhanging hill.

The result of several days' careful examination of this kjökken-mödding was the discovery of a very heterogeneous collection which it may be convenient to consider under the heads of natural and artificial objects.

The natural objects are,—marine shells, and bones of various animals and birds;—the artificial consist of cylindrical bricks, pottery, two spindle whorls, a small piece of glass, some stone implements of a peculiar form, a small bronze pin, and an iron implement or weapon, portions of two stone querns, or hand mills, and some tiles with turned up edges—“*Tuiles à rebords.*” No human bones of any kind were found, nor were there any needles or other implements of bone.

The bones comprise sheep, ox, horse, pig, goat, some few birds, and a very few fish vertebræ; none of them appear to have been gnawn by dogs, as is the case with like deposits in Denmark, nor, indeed, have any remains of the dog been found; the bones do not appear to have been subject to the action of fire, but, as in the Danish mounds, all those that contained marrow have been broken, probably to extract the marrow, and the jaw bones of the oxen and horses have also been broken. All the bones are of existing species except, perhaps, the ox, which, I believe, is the young of *Bos longifrons*, probably a small variety; and the horse teeth appear to have belonged to a small race of ponies, probably like the Shetland ponies.

The shells consist principally of limpets; there are also some shells of *Haliotis* or ormer, mussels, oysters, and one or two *Myas*. All of these are now found recent on the shore, and all are usually sold in Guernsey market for food. When found, the limpets were often seen packed neatly inside each other, twelve or fourteen in one packet, just as they are sometimes put together by children in play.

Thus far the contents of this *kjökken-mödding* appear to correspond as nearly as may be with those of similar deposits in Denmark, which have been so often described. In each we find the remains of shell fish, taken from the neighbouring sea shore, and bones of various domestic animals, all of species still existing.

The other objects, however, which were found here, indicate a very marked distinction, between the condition of those people and that of the ancient Danes.

The most characteristic, and probably the most interesting, of these objects are the circular or cylindrical bricks; these are of various lengths, but all of the same thickness, all have evidently been moulded by hand, on almost all is seen the impression of the workman's thumb or forefinger, sometimes both, and on several the impression of the cuticle is still plainly visible; an impression is found at the base of almost all the bricks, as if, when in a soft state, they had been placed on the edge of a flat stone or plank.

These bricks were mixed with the limpet shells and bones, and were found in such profusion, as to lead to the belief, that they must have been made on the spot.

It is difficult to surmise what particular purpose in the domestic economy of these *kjökken-mödding* people, they were intended to answer, certainly they were not adapted for any kind of building. Mr. Lukis informs me that similar things are now in use at Allahabad, where the Hindoo potters place them under the jars and vessels to support them before they are burnt; possibly these were used for the same purpose here, or they may have been used to support the pans or pipkins

of which so many fragments are found, while the limpets were in course of preparation for food.

Besides these cylindrical bricks, a large quantity of broken pottery was found. Some of this is very rude and coarse, and is evidently hand-made, while other fragments are clearly of Roman workmanship; one piece exactly corresponds in pattern with a vase which Mr. Lukis lately obtained from the Roman station at Alderney, and several pieces of undoubted Samian ware were also found.

The hand-mills, or querns, of which portions were buried in the heap, are made from a conglomerate which is found in Jersey and on the opposite coast of France. These have an important bearing upon the question of the people by whom these heaps were left, since it is clear from them that they were acquainted with agriculture, or, at least, were supplied with corn of some kind.

No flint flakes or scrapers were found in the heap, nor any polished celts, although they are occasionally met with on the surface of the island, and in the cromlechs. The only stone implements met with, were some of those rude mullers, or chisels, which are often found in the Channel Islands, and some rounded and other stones, evidently used as hammers. The implements in question are usually about two inches long by one broad, and have at one end, and, indeed, sometimes at both ends, two or three sharp edges or facets.

These implements exactly correspond with some which have been discovered by the Rev. F. W. Lukis, in the interior of cromlechs previously unexplored. They are also found occasionally on the surface, both in Herm and in Guernsey, and so far as I am aware, are almost peculiar to the Channel Islands; some, however, have been seen in Cornwall. It is difficult to conjecture to what use they could have been applied; possibly it was in connection with some small troughs or basins of stone, which are often found with them in the cromlechs, although none were found in this heap.

The other objects met with, comprise a small bronze pin, an iron weapon or tool of some kind, too much corroded to allow of our ascertaining its original form or use.

Such, then, is the most accurate description that I can give of the objects found in this deposit. It remains only shortly to consider what conclusions we may draw from it, as regards the people with whom it originated.

With regard to the Danish kjökken-möddings, some doubt exists as to whether they were cotemporary with, or anterior to, the date of those tumuli, in which so many highly polished stone weapons are found; in short, whether they belong to the palæolithic or neolithic age. A controversy on this subject has been carried on between Professors Worsaae and Steenstrup, the former holding that the kjökken-möddings preceded the polished stone periods; while Professor Steenstrup considers that they were cotemporary.

The case, as regards the Herm kjökken-mödding, is just the converse of the Danish; the question is not whether it is older than the cromlechs, but whether it is so old, and upon this there seems to be little or no doubt.

True, the same stone implements, and those of a peculiar type that are found in undisturbed cromlechs, are found in the kjökken-möddings, but they are found also on the surface, and the people who left the middens may have found them on the surface, or even have derived the art of making them from the men of the cromlech period.

On the other hand, the cromlechs of those islands which have been most carefully explored by Mr. Lukis and his sons, are invariably found to be destitute of any traces of Roman pottery, or metal, or glass, nor do they contain any implements, to indicate that the people had any knowledge of agriculture. The presence of these things, therefore, in this kjökken-mödding is a proof of comparatively great progress in the arts of life, and leads to the belief that the people who possessed them, lived at a far later period than those who had them not.

Upon a careful review of all the circumstances, I have arrived at the conclusion, that the kjökken-mödding in question was probably the work of a small community of settlers on the shore, perhaps as potters, for the purpose of working the clay which is found here, and that from an occasional intercourse with Roman traders, or traders bringing Roman wares, they became possessed of the pottery and mill stones, and iron and glass of which the traces are found. We know that there was a considerable Roman settlement in the island of Alderney, from which those things may have been brought, or they may, perhaps, be assigned to an earlier date, as having been derived from some such wandering merchants as are mentioned by Strabo, on the report of Pytheas, as visiting the islands of the Cassiterides, and bartering pottery and salt with the natives for hides and metals. To what people, or nation in particular, the colonists or settlers are to be ascribed we know not, and probably never shall know. They could hardly have been Romans, since there are no traces of any habitations, and those who had been used to Italian cities were not likely to camp *sub Jove frigido*. Neither could they have been of the same race which built, or were interred in the, cromlechs met with in these islands, since, for the reason above given, the cromlech builders must long previously have passed away.

Thanks were voted to the author of the paper.

Mr. KENNETH R. H. MACKENZIE said the old Keltic practice of burying bodies above-ground extended far more to the south and uttermost east than was commonly supposed, even to Cape Comorin. It had prevailed in Wendic lands such as Pomerania, and there was a chain of tumuli extending from Britain as an Ultima Thule through Northern Europe to Persia and to the remotest regions of India, Burmah, Arracan, and Siam. It was always a rule, by or according to the Aryan idea, Aryans being considered as mountain races, to so bury the remains of the bodies, in strict rite, previously incrimated. It was a Buddhist practice to incrimate, as did also the Romans and others, and bury in the form of high tumuli, sometimes called topes. Buddhistic rites might be traced to these islands. He (Mr. Mackenzie) thought so at least, and regarded the Cleveland grave mounds as an indication of the fact, though, perhaps, more recent than some persons might think.

Mr. LEWIS thought that anyone acquainted with the Welsh triads would perceive a connection between them and Buddhism, which might be a degraded form of a primæval worship, of which Druidism in its better days was a higher representative. He thought there could be no doubt that the desecrated graves mentioned in the paper had been desecrated intentionally.

Mr. DENDY said the black flints found in the mounds described had evidently been brought from some considerable distance, but why it was impossible to say. With regard to sepulture, the manner of burial practised in these gravehills was nothing like that of the Buddhists in India.

The Rev. DUNBAR HEATH said it appeared to him that the relics found in the Yorkshire grave-mounds were comparatively recent, for they belonged to a period when the surface of the country was the same as it is now, and they comprised earthenware and other articles, indicating some advance in civilisation.

Col. A. LANE FOX observed that the kitchen-midden could not in itself be regarded as an evidence of age. It was merely a refuse heap, and wherever there were kitchens there would be kitchen-middens. The age could only be determined by the relics contained in them. He had found kitchen-middens of the Roman age in the Isle of Thanet, in which were finger bricks similar to those described in the paper, mere lumps of clay squeezed in the hand, and shewing the impress of the fingers, associated with fragments of Roman pottery: they were probably used as supports in baking the pottery. He could not agree with some of the speakers in thinking that such subjects were not anthropological. If the science of anthropology was to be based upon facts, there was no source from which so much valuable evidence could be derived as to the origin and early history of man as from prehistoric archæology, archaic anthropology, or whatever it might be called; the terminology was quite immaterial, but the evidence relating to it was of the utmost value, for by collecting facts such as were contained in the papers that had been read, by classifying and arranging them systematically, we should obtain an insight into the laws observable in the development of human culture.

Mr. LEWIS said it did not necessarily follow that the cromlech building people had passed away, even if they had ceased to build cromlechs. As to the rounded pieces of earthenware, such pieces were still used to support the earthenware vessels in the kiln when being burnt. He did not consider kitchen-middens to be always very ancient.

Mr. DENDY said the prehistoric age was not indicated by anything in the paper, for the kitchen-midden might have been formed by a people long after the prehistoric age had passed away. Herm was a mere barren island. People might have lived there perfectly isolated; and might have been a rude people in consequence of the difficulty of communication with the main land. The cromlechs were different things from the kitchen-middens, and had nothing to do with the paper.

The meeting was then adjourned.

ORDINARY MEETING, FEBRUARY 16TH, 1869.

DR. BEDDOE, PRESIDENT, IN THE CHAIR.

THE minutes of the last meeting were read and confirmed.

The following new Fellows were announced :—Frederick J. Jeffery, Esq., Doolton Hall, Liverpool ; John Macartney, Esq., Ramandrooz, Ballary, Madras ; Isidore Asher, Esq., 9, Guildhall Chambers, E.C. ; Dr. Ernst Juch, 93, London Wall.

Professor Ernst Hallier, of Jena, was elected a corresponding member.

The following presents to the Library and Museum had been received since the last meeting, viz :—

FOR THE MUSEUM.

From Dr. HUNT.—Barkow. Bemerkungen zur Pathologischen osteologie. Forty-two casts of skulls from Edinburgh Museum.

FOR THE LIBRARY.

From the AUTHORS.—Lloyd P. Smith, Esq.—Address to the Alumni Association, Philadelphia, 1869. F. Pruner Bey—Discours sur la Question Anthropologique. Scott Surtees. Julius Cæsar. Did he cross the Channel? Julius Cæsar. How he sailed from Zealand, and landed in Norfolk. Footprints of Roman occupation in the southern parts of Northumberland. Capt. R. F. Burton, Ex-Pres. A.S.L.—The Highlands of the Brazil, 2 vols. Dr. J. Barnard Davis, V.P.A.S.L.—The Weight of the Brain in Different Races of Men.

From T. SQUIRE BARRETT, Esq., F.A.S.L.—Social Science Review, vol. i, and 34 Nos. vol. ii. National Reformer, various numbers ; and Human Nature, Nos. 15 to 20 ; the Apocryphal New Testament ; Satire ; and other minor works.

From Dr. C. CARTER BLAKE, Hon. F.A.S.L.—Le Hon, L'Homme Fossile, 2nd edition ; Barnard Davis, Thesaurus Craniorum ; Journal of the Geological Society of London, and Geological Magazine, sundry Nos.

From the RESPECTIVE SOCIETIES.—Journal of the Asiatic Society of Bengal, Philol. and Nat. Hist., Part i, No. 4, Part ii, No. 2 ; Proceedings of the Asiatic Society of Bengal, Sept., Oct., Nov., 1868 ; Journal of the Royal United Service Institution, vol. xii, Nos. 50, 51, and index.

From Dr. GARBIGLIETTI.—Barnard Davis on the Brain of a Negro of Guinea ; Note on the Antiquity of Man in Central Italy ; Letters by.

Thanks were voted for the same, and specially to Dr. J. Hunt for his valuable present to the Museum.

The PRESIDENT exhibited a skull from the cave of Lombrive, in the Pyrenees. It was found under stalagmite, imbedded in calcareous tufa, and presented a dolichocephalic form, whereas other skulls found in the same locality were brachycephalic.

The PRESIDENT then said it was due to himself and to the Society, as it was the first occasion of his addressing them as their President,

to say that, though he felt very grateful for the honour they had done him, he had neither sought nor desired it. And that, not because he cared for the detractive comparisons to which he felt he must inevitably be subjected, when it was borne in mind that he had been preceded by one of the most distinguished of modern travellers and discoverers, who was also a man of great general accomplishment, and by a gentleman to whose zeal, energy, ability, and tact the Society owed its foundation, its progress, and its strength. But he did care about the progress of anthropological science; and, looking to its interests, he did not think the Society had chosen the best man for the office he held; nevertheless, he had on that, as on all occasions, bowed to the opinion of the majority. Living so far from town as he did, he would be unable to attend the meetings so often as he could wish, but he hoped the members would make allowance for that, and supply any deficiencies that might occur. The Society was as strong as ever; the work to be done was plentiful, though as yet the labourers were few. He trusted that the Society would increase and widen out; and, like Aaron's rod, swallow up every other rod.

Dr. BEDDOE then read a paper "On the Physical Characteristics of the People of Brittany." Dr. Beddôe's paper was founded on his personal observations during a short tour in Bretagne, and on those of MM. Broca, Boudin, Guibert, and Guiche; and the drift of it was to show that the Bretons were in general remarkable for shortness of stature, breadth of head, and darkness of hair and of eyes, and that these four characteristics, except perhaps the last, were almost invariably modified in the ratio of admixture of alien with purely Armorican blood. He found a great resemblance in person, as might be expected from the relations of the languages, between the Bretons and the Welsh and Cornish; and thought it probable that the comparative length of head, and the less frequency of black hair, in the people about Morlaix, might be due partly to the immigration of insular Britons in the fifth century.

On the motion of the DIRECTOR, seconded by Dr. J. HUNT, the thanks of the meeting were voted to Dr. Beddôe for his communication.

Dr. Charnock, F.S.A., F.R.G.S., V.P., read a paper on Locmariaker, of which the following is an—

Abstract.

To the north of Locmariaker, and on the route to Carnac, is a dolmen called Mané-Lud. It measures about twelve feet by ten, and you descend into it by a flight of stone steps. The slab which covers it is twenty-six feet by sixteen, and is broken into two pieces. Dr. Fouquet, who wrote on Dep. Morbihan, renders the name Mané-Lud, (B. Bret., *Mane-Ludu*), Montagne Cendre; and he says it was not named, as some assert, from being formed of ashes, but because it incloses a sepulchral grotto. Dr. Charnock thought that the name may simply mean the "stone of Lud" (*Méan-é Lud*), to whom the monument was perhaps erected. It could hardly be called a mountain. Not far from the Mané-Lud lies a fallen menhir, broken into two pieces, and measuring twenty-six feet in length. Near it is a dolmen

called Pierre de Rutual (Rituel?), The overlaying slab is of considerable size, and is broken in two. Next to it is another stone, supported by seven or eight more, and close by are three or four fragments of stone. The largest of these is twenty-three feet in length, the smallest rather more than seven feet. To the south-west of the Mané-Lud, half-buried in mud, is Le Pierre des Marchands, called also Table des Marchands and Table de César. It measures twenty feet and a-half in length by twelve in breadth, and overlays six stones, by only two of which it is supported. On the underside of the slab is a carving, which is said to represent a celt. Upon a stone at the base, some carvings are still visible, but they have been nearly effaced by time. Close by this dolmen is a menhir; and not far off is another large stone. Very near the Table des Marchands, a colossal menhir lies on the ground, broken into four pieces. The four blocks lay as shown in the rough plan drawn by the author of the paper. Dr. Fouquet thinks this menhir, when whole, may have cubed 250,000 kilogrammes. Dr. Charnock took the measure of each of the four blocks. The largest of the fragments was thirty-two feet and a-half by thirteen and a-half; the smallest, ten feet by six and a-half. When upright, this menhir must have been seventy-two and a-half feet in height. From the position of the fragments, he thought that one block must have been thrown down first, and the other three at a subsequent period. The Pierre de St. Pierre lies in a different direction to the Pierre de Rutual, and is quite a league from the bourg, near the village of St. Pierre or Loc Perec. The entrance is so narrow that there is scarcely room to creep into it. It is covered by two slabs. The dolmen called Pierres Plattes is about half an hour's walk from the Pierre de St. Pierre, in a different direction, and on the seacoast. It consists of three slabs (total length seventeen feet), resting on upright stones, some of which are now overgrown by weeds. The largest slab covers a grotto capable of holding several persons. There is also another dolmen about half a kilometre from Locmariaker, with a menhir broken into two pieces lying at its foot. It is called by the inhabitants "Mané-er-Hrouich," which has been rendered "Montagne de la Fée," but Dr. Charnock would rather translate it "stone of the fairy."

Thanks having been voted to Dr. Charnock, the following paper was read:—

3. "Reminiscences of a Visit to Locmariaker and Gavr Inis," by Mr. A. L. Lewis, F.A.S.L. The author stated that Locmariaker, or "Virgin Mary's Town", stands on the site of the ancient Dariorigum, the capital of the Veneti, on the Mer de Morbihan, Brittany, and is surrounded by innumerable remains of its ancient inhabitants, some of which he described. One of these was a dolmen, nearly seventy feet long, which the author believed to have been intended for sepulchral purposes. Gavr Inis, or "Goat's Island", is situated in the Morbihan sea, and is celebrated for its chambered tumulus, the chamber and gallery of which are together about fifty feet long, five feet high and three feet wide at the entrance, increasing gradually to a height and width of from six to eight feet.

The floor and roof are formed of large flat stones; the latter being supported by twenty-nine upright stones, nearly all of which are covered with incised ornamentations, composed chiefly of segments of concentric circles, interspersed with waved lines, and resembling somewhat the Northumbrian rock-inscriptions, and those of the tumulus at New Grange, Ireland.

Some rubbings of parts of these inscriptions were exhibited by Mr. Lewis, and some specimens of antique-looking vessels of pottery-ware, which he had purchased in the market-place at Reunes, and which, he said, varying in size according to requirement, were in common use in Brittany at the present day.

The thanks of the Society having been given to Mr. Lewis, the President called upon Dr. Hunt to read his paper, but suggested that he should read only such portions of it as related to the specimens and drawings before the meeting, as otherwise there would hardly be time to discuss all the papers.

Dr. HUNT said, as his paper would take some while to read, he would briefly describe the drawings exhibited; for it was only due to the Chairman that sufficient time should be left for the discussion of his (Dr. Beddoe's) paper.

Abstract.

4. "On Carnac, in Brittany," by Dr. James Hunt, F.S.A. The author explained the results of an investigation on the plan of this monument, and exhibited a series of drawings representing its present state. He controverted the statement of Sir John Lubbock, that Avebury and Stonehenge were the two largest monuments of their class in Europe; contending that Carnac was by far the largest monument of the kind in Europe, and that it differs in many respects from Stonehenge; and that there was no justification for the opinion advanced by Sir John Lubbock, that those monuments—allied to that of Carnac, like Avebury—belonged to the same period as that which produced Stonehenge.

The monument consisted of eleven rows of stones, of very different sizes, of which about 4,000 now remained, but which, in the opinion of many Archaic Anthropologists, had originally consisted of 10,000. It extended probably as far as Locmariaker; for on the other side of a small piece of water, where it appeared to terminate, similar cromlechs and remains had been traced. The stones travelled in a serpentine fashion, and cromlechs were found on both sides of them, and with such regularity that, in proceeding along the line of stones, it was a matter of certainty in which direction the next cromlech would be, and though not always clearly discernible, a little excavation would have rendered it so. The plan shown was based upon the admittedly imperfect one of Mr. Bathurst Deane's, made in 1832, which he had been able to improve and amplify. He hoped the Anthropological Society of Paris would take the matter up, but at the present moment Englishmen could boast of having the best ground plan of Carnac yet made. It was notable that Carnac consisted of eleven rows of stones; while all the English monuments of similar character were composed of only two such rows: and with the exception of

those in Devon, they all took a bend, which had given rise to the opinion, correct or incorrect, that they indicated serpent worship. When he considered the gigantic proportions of many of the stones at Carnac, the large tract of country over which they extended, and that the people who had placed them there, and who, by the very nature, extent, and difficulty of the work, evidently could not have been barbarians; he was struck with wonderment at the spectacle, it was so grand and so sublime. He hoped that, ere long, a correct ground-plan would be made; but in the meantime that those exhibited would be published; for the monument at Carnac was, in his opinion, far larger and more beautiful than any of the same character in any other part of the world.

The PRESIDENT thanked Dr. Hunt, in the name of the meeting, and remarked, that it was a strange thing that the French should have almost entirely neglected so grand an ancient monument. No such drawings of Carnac and Locmariaker, as those now exhibited by Dr. Hunt, had, he believed, been made before; and he called upon the members to discuss the papers which had been read on the subject.

Dr. HUNT said, as he had been in Brittany, he could testify to the value and correctness of the photographs of the people, one of which was exactly typical of the natives with whom he had associated during his investigations. While agreeing with the President on that point, he quite differed as to his estimate of the proportion of unsoundness among that people. He had found that disease of all sorts abounded, that deformity was very common, and that particularly about Carnac they were in a very unhealthy state. There appeared to be two distinct types of men living in Brittany; but he noticed a great many different types among those attending the fair at Vannes, which variety occurred, probably, from the large number of persons who came long distances on that occasion. The President's paper was of great value, as contributing to determine the race and types of man in that interesting district. They seemed to have a great horror of enlistment; and he should like to know if the President had remarked any want of sympathy, on the part of the population, towards the government of the nation that would account for that feeling, which was the more remarkable, as their immediate neighbours were so martial a people. At any rate, so strong a dislike to military service was an important characteristic.

Dr. NICHOLAS said, that as he had been several times in Brittany, and had studied the people and the country, he had no hesitation in saying that he knew no district, within easy reach, so deeply interesting, so new, and so overwhelming in the extent of its ancient monuments. The ecclesiastical monuments were particularly instructive from their elaborate nature and architectural peculiarities, and as records of the piety of the old Bretons. At the present day, in no part of France did the people display so much of the spirit of religion. On weekdays, you scarcely ever entered a church but you saw men as well as women at their devotions. On Sundays, they flocked in crowds to their places of worship with an enthusiasm that was quite remark-

able. Being a Welshman, he specially noticed their music, which, being mainly in the minor key, was similar to that of Wales, and the singing, instead of being cold and formal, was fervent and hearty. He entirely concurred in the President's description of the physical aspects of the people of Brittany; but he could not quite agree with Dr. Hunt's opinion of their lack of martial bravery. In fact, in no part of France had the people been so distinguished, in past ages, for their devotion and sacrifice to the royal cause, and their opposition to revolution and democracy. He need only mention the name of Du Guesclin and the Vendéans. He had often passed by Locmariaker, the interpretation of which he took to be, "the place of dear Mary" (*loc-maria-cêr*). The vast remains of that wonderful district, so fitly termed "a monument," extended across the whole undulating plain from Locmariaker to Carnac, and must have been built, he thought, through the course of many succeeding ages. Near Carnac, there were two great fields of Menhirs; one called Kemaon, which consisted of extremely large stones; and another, whose name he did not then remember, covered with smaller ones, in greater number. The whole of this mysterious accumulation of monuments extended over a space of about seven miles, at least. He sympathised in the feeling of reverence and wonderment Dr. Hunt had expressed; for no one could reflect upon the immense labour involved in bringing together so vast a collection, without being struck with the strong reverence for religion, or for the dead,—according as we view these erections as religious or sepulchral,—that must have existed among the unknown people who built them. There was no such feeling in Europe now,—no such love of ancestry,—no such love of the past,—no such permanent labour for religion. The great cathedrals, built so long ago, so numerous in Brittany, should suffice to kindle in us a kind of religious awe, if nothing else did. But these cromlechs and menhirs were still more wonderful and impressive. He observed that all the larger stones at Carnac displayed certain striæ, which were evidently not produced by friction of stone against stone in the glacial period, but had been wrought by the human hand; but the time of their execution and their purport were wholly unknown. As a guide to Brittany, he would recommend Mr. Jephson's interesting book, which was well written, and contained photographic views by Mr. Reeve, of some of the monuments referred to, and of many of the great churches, and other public buildings of Brittany. With regard to the intellectual productions of this country, it might not be amiss to say that it had given birth to Chateaubriand, to Le Sage the author of *Gil Blas*, to Descartes, to Abelard, and to many other thinkers and writers of celebrity.

Dr. CHARNOCK did not agree with Dr. Nicholas's etymology of the name Locmariaker. Villemarqué rendered *ker*, *kéar*, logis, maison, habitation, village, ville, cité, bourg. The vocable was found in a great many local names in Bretagne. It was another form of the Welsh *caer*, contracted from the Irish and Gaelic *cathair*. Those desirous of visiting Carnac should do so as soon as possible, inasmuch as the people were using the stones for the walls of the fields. The

name was properly spelt like Karnak in Egypt, a word of oriental origin. Some rendered Carnac "a burying-place," others, a "field of flesh;" and it certainly might mean "field of flesh", from *carn*, flesh, *ach*, a field. The name however was more probably from the Bas Breton word *karn*, pl. *karnek*, *karnez*, a heap of stones; in Welsh *carn*, pl. *carneidd*; in Gaelic, *carn*, a cairn; *carnach*, abounding in cairns.

Sir DUNCAN GIBB said he was particularly struck with the chairman's description of the inhabitants of Brittany, it so nearly corresponded with that of the French Canadians, and he noticed as great a resemblance in the photographs exhibited. But that was not so much to be wondered at when it was remembered that Jacques Cartier, the discoverer of Canada, sailed from St. Malo, in 1534, and took many of his countrymen with him. In Canada, as in Brittany, wooden sabots were still in use by the country people, since their first introduction by the French emigrants, over three centuries ago. The characteristics of the French Canadian were extreme goodnature and simplicity. They were not, indeed, a martial people; but in 1812, at the battle of Chateauguay, there was a regiment of French Canadian Voltigeurs, who almost wholly contributed to the success of the day. In 1837, they had also turned out for military service, and would do so when necessary, like any other classes of people. The French Canadian varied according to the locality, the Brittany type being mostly in Nova Scotia and shores of the Gulf of St. Lawrence; the Norman and other types occurred in the lower province. Farther west, the inhabitants were descendants of the English race. But to return to the question, he thought Dr. Hunt's plan of Carnac would be of great assistance to future travellers there, were it published with his extremely interesting paper.

Dr. BEIGEL did not think the stones at Carnac were monuments at all; and until there was evidence adduced to show that human power and skill had been employed in erecting them, he would not alter his opinion, that they were similar in character to those existing in some parts of Silesia. Between the two villages of Adersbach and Weckelsdorf, which were six miles apart, there were nothing but huge stones, to which those of Carnac were mere dwarfs; these stones, being so arranged as to form streets, squares, etc., are known as the "stone town." By a freak of nature, there were stones in the shape of human busts, one of which went by the name of the "mayor of the town." There was another group of great stones in the shape of a large church; one stone, set on its apex, is known as the "sugar-loaf"; but geologists have never doubted that the Silesian town of stones was only a geological formation. And as to the supposed hieroglyphs upon two of the Carnac stones, he must confess that they have no resemblance to what he had ever seen of hieroglyphs. Was it not well known, from time immemorial, that every visitor to such a place would chisel his name or some sign upon the stones to immortalise his existence, or at least to leave some trace of his presence? Such markings will, perhaps, puzzle the anthropologists who made investigations a thousand years afterwards.

Up to that time, he could only see in Carnac a miniature of what existed on a large scale in Silesia, and is anxiously waiting for the evidence, in support of the opinion, that the stones at Carnac have been erected by human power.

The Rev. DUNBAR HEATH said that, in the exuberance of their feelings of strength at the discovery, no doubt, of the use of metal instruments, people, at very early times, pleased themselves by erecting gigantic piles of masonry. At Rome, there were miles of gigantic sewers and aqueducts; in Greece, the name of Cyclopean was given to a certain order of masonry built under Argos and Mycenæ; in Egypt, there were the pyramids; in India, also, great works of stone recently discovered; and in the account of the Hebrews, the traditional history of the Semitic races, there was the traditional Tower of Babel. All such great works were proofs of an energy and power with which those early peoples were hardly credited. Was it not becoming more evident that civilisation was not so modern a thing after all? The earliest army in the field, of which there was any account, consisted of thousands of men, who could not have been manœuvred and provided for without a very considerable amount of civilisation; and yet that was done 2,000 or 3,000 years B.C. And then, as to colonisation, that was a gigantic operation, but was accomplished all over Europe and Asia. So great a work, successfully accomplished, must certainly enlarge one's ideas of the energy of prehistoric man. But to endeavour to find out the origin of those stones, so placed at Carnac,—it had been said, that great stones were left standing in that manner by the washing away of the loose material surrounding them; but that was not a satisfactory conclusion. He would try the exhaustive process of reasoning. The Cymri did not put up those stones because they did not do so now, and never in history had the British race done so; the Celts could, therefore, be put aside. The Turanian do not put up such monuments now; therefore, they also could not have done it. The difficulty, perhaps, is to discover what race first used bronze weapons; and if all the races were taken, it ought not to be difficult to find out by which such monuments must have been erected.

Mr. PIKE could not pretend to say whether the stones at Carnac, scattered over so wide a district, were all brought there by human agency or not; but he wished to make a few remarks on Dr. Beddoe's paper, which deserved a fuller discussion than it had received, or than it could receive at that hour of the evening. Dr. Beddoe had said, in reference to the present inhabitants of Brittany, that persons resembling them in darkness of hair, were to be found no nearer than in Italy, and there not farther north than in Naples. The Romans, however, spoke of the inhabitants of Gaul as a fair-haired people; but if the people of Brittany, stated to have very black hair, were like their ancestors, it became difficult to understand the accounts of Roman writers, and not less difficult to believe the story of colonisation from Great Britain. It was evidently untrue that there had been any such colonisation of any importance. The Bretons, it was stated, were short in stature and round in the head. How was it,

then, that the people of Cornwall, from whom, on the same common notion, they must have descended, were tall and long-headed? And, once more, as the people of Brittany were shorter than the French, and the French were shorter than the English, it would be very difficult to discover any proof of the colonisation of Brittany from Great Britain. Such an idea might be found, possibly, in many histories of no high repute; but there was no mention of it in any contemporary authors who could be trusted.

Mr. VILLIN confirmed Dr. Hunt's statement, of the strong dislike the people had to military service. The men had been known to cry for five hundred miles on their journey to the camp; and "to cry like a Breton" was a common phrase in the army, which had been originated by "Bretons" leaving home.

Dr. HUNT said that Dr. Beigel was not original in his suggestion, that Carnac was only a geological formation, and not correct in that notion, as there was evidence of design, which would bear examination in detail. He would not say that the work had been done by human beings; but at any rate it had been done with intelligence. The particular stone on which were the marks which Dr. Beigel had declared were not hieroglyphics, was found inside one of the cromlechs. It was, no doubt, a great thing to distinguish between natural and artificial formations, and the difference was not merely in the number of rows of the stones, but in their position, and other circumstances.

Mr. McGRIGOR ALLAN wondered that any one, looking at such drawings and diagrams, made by an able artist on the spot, could doubt the agency of man in the formation at Carnac. It was a town of rude obelisks; and that monument was a symbol of the male organ of generation, typical of the reproductive power of nature. This phase of religious worship was still preserved in the reverence paid to the lingam and the yoni (*vide* Dr. Inman's work on *Theological Philology*), and had been, Mr. Allan thought, at one period, general throughout Europe. Hence, the monuments at Stonehenge, Abury, Carnac, and other Druidical remains, testifying to the religious ideas of our ancestors, had a special interest for the theologian as well as the anthropologist.

Mr. CONWAY recognised a curious resemblance between some of the figures and those that were used by the old necromancer, Michael Scotus, as represented in a book of his preserved at Leipzig; and thought, if these figures were genuine, it might be interesting to compare them.

Mr. LEWIS remarked that though, as regarded size, it was absurd to speak of Stonehenge in the same breath as Avebury and Carnac, there was a resemblance in the plan of Stonehenge to that of Avebury, inasmuch as both were surrounded by trenches, and both had clearly marked avenues of approach, but in the former these approaches were not marked by lines of stones. With respect to human agency there was no doubt about it in the case of Avebury, though the stones there were much larger than any at Carnac or Stonehenge, one still in position which he had measured being 18 feet long, 15 feet high, and 6 feet thick. The reply to Mr. Dunbar Heath's objection

was that the building of these monuments was discontinued on the introduction of Christianity, which took place very early in Britain, even if they were not previously prohibited by the Romans, who took every opportunity of suppressing Druidism. A parallel instance occurred in the case of the war chariots which were used before the Roman occupation, but of which nothing was heard afterwards. It certainly did not follow that because people did not do a given thing at any given time it had never been done by their ancestors.

The PRESIDENT, in reply to the remarks which had been made upon his paper, said that Dr. Hunt had not convinced him of the unhealthiness of the people of Brittany. The military returns upon which he had based his opinion were taken from the conscripts, and he was still of opinion that, though a large number were rejected on account of size, the proportion of men fit for service out of those who were tall enough was very high. Nevertheless, he admitted that many might be unfit in other respects, as well as undersized, and those would not be included in the returns as to health. He considered the Bretons anything but cowards, and it was probably their strong attachment to their homes and country which made them so reluctant to be drawn for military service. In the middle ages they were remarkable for military prowess; they fought well under their own leaders; and, indeed, there was a time when the flower of the French armies were all either foreigners or Bretons. It was a common phrase that any great personage came attended by his Bretons, signifying his men at arms. It was quite true, however, that at the present day few of them entered military service of their own accord. He was glad to hear Sir Duncan Gibb remark the similarity existing between the French Canadians and the people of Brittany. That fact shewed the persistence of moral and physical peculiarities in spite of change of media and locality. Though there could be no doubt as to the human origin of the monument at Carnac, it was well to remember that there were many assemblages of huge stones in various parts of the world that were considered doubtful. Those at Moytura, near Lough Arrow, in Ireland, for example, had been supposed to be ancient monuments; but personal investigation had convinced him that they were not so. At Chemalu, in Asia Minor, and Brimham in Yorkshire, and elsewhere, there were other undetermined objects of similar character which he believed to be wholly natural productions. In reply to Mr. Pike, who had opened such large questions in his remarks upon the hair and general appearance of the people of Brittany, as contrasted with that of their neighbours across the Channel, he would mention that the hair of the people was not so dark in the south-east of France, or the north of Italy. He thought Mr. Pike had assumed rather too much when he spoke as if the Bretons of to-day were the descendants of the yellow-haired Gauls of the Romans. In his opinion (though he would not speak confidently) they were, as a race, more akin to the Iberians than to the true Gauls, who were probably a military caste, and did not form the bulk of the population. The objection as to the differences between them and the people of Cornwall presented some little difficulty; but on the Devon side of the river Tamar was a race of men

very much resembling both the Cornish and the people of Brittany, and, as an anthropological friend of his had expressed it, "they were little fellows, but they weighed like lead." The fact that the people of England were long-headed was very remarkable when viewed in connection with the recent investigations in Brittany.

The meeting then adjourned.

MARCH 2ND, 1869.

T. BENDYSHE, Esq., M.A., Vice-President, in the Chair.

THE minutes of the preceding meeting were read and confirmed.

The following gentlemen were announced as having been elected Fellows of the Society since the last meeting :—J. Wodderspoon, Esq., The Chesnuts, Walton-on-Thames ; J. Passmore Edwards, Esq., 31, Tavistock Street, W.C.

The following presents to the museum and library were announced, and thanks were voted for the same :—

FOR THE LIBRARY.

From the SOCIETY.—Proceedings of the Royal Society, vol. xvii, No. 108.

From the EDITOR.—The Medical Press and Circular to date.

From the AUTHOR.—The Languages and Races of Dardistan, vol. i, parts 1 and 2. By Dr. G. W. Leitner.

From the AUTHOR.—Genealogical Chart of the House of Bourbon. By F. J. Jeffery.

From HENRY PRIGG, Jun., Esq.—Quarterly Journal of the Suffolk Institute, No. 1.

From the SOCIETY.—Proceedings of the Royal Geographical Society, vol. viii, No. 1.

From F. G. H. PRICE, Esq.—The Paranà, or South American Recollections. By Consul J. T. Hutchinson.

FOR THE MUSEUM.

From TOM CRASTON, Esq.—Skeleton of Adult Male Gorilla.

From W. LATTA, Esq.—Boa Fan cap, Gaboon, West Africa ; set of ivory armlets ; one wooden spoon, Batanga, West Africa.

From R. B. N. WALKER, Esq.—Two War-caps from river Borea, West Africa ; one War-knife from river Camaroons, West Africa ; two Beheading-knives, Batanga, West Africa ; Skull of a Slave from Princes Islands, West Africa ; one Kilt made of a young palm leaf used in Fetiche dance village of Ashyaka, Iganas, river Ogowe, West Africa.

A special vote of thanks being given to Mr. Tom Craston for his present of the gorilla skeleton.

Mr. FREDERICK HOVENDEN then read the following paper :—

Man an Indestructible Atom.[*Abstract.*]

This was a suggestive paper laying down the following hypothesis: It is conceivable that there may exist in the human skull an atom to which all the forces of sensation are directed, and from which flow all the motor forces, also that there may be superadded to it a superior organ—the brain, which receives the sensations, evolving thought and other complex phenomena. It was suggested that this atom might exist while the individuality existed, and that at death, by process of the chemical forces, it would be freed, until certain fixed external conditions of matter allowed it to be re-evolved. Thus the human being was, according to this author, reduced to an indestructible sensitive atom; when evolved, the visible parts, as the trunk and its viscera, the limbs, the brain, etc., being the instruments by which that atom received sensation, motion, and all the phenomena recognised in the human being. The hypothesis was enlarged to the whole organised creation, supposing this kingdom of matter to exist, as in the inorganic world atomically and indestructibly; while every atom would produce an individual when placed under proper external conditions, it will follow, that, tracing back geologically, those atoms which are capable alone of the lowest organisations, would be developed by direct means of the inorganic world, while the next higher order of atoms would be evolved into individuals by means of the next lower order, supposing, of course, the development of individuals to be subject to those slight variations described by Darwin and others. It would follow on this hypothesis that man was evolved—having existed always atomically,—by means of the next lower species, while the existence of the atom in the individual gives place to continuity of ideas. Mr. Hovenden supported his argument by bringing forward the evidence from chemical physics, comparative anatomy, and physiology.

The thanks of the meeting were given to Mr. Hovenden for his paper.

Mr. PIKE remarked that if (as the author of the paper had suggested) vitality was seated in an atom at the base of the brain, all sensations would converge to it by conducting nerves; but no such convergence of nerves was observable in any part of the brain. There were no doubt nerves from various parts of the body to the brain, and conductors from one part of the brain to another, but these had not been found to converge to a single point. The theory of an indestructible something in man, though vague, was not new, and he did not think that Mr. Hovenden had explained anything by his paper.

Dr. CHARNOCK said he could not conceive such a thing as a destructible atom.

Mr. A. L. LEWIS concurred in the opinion that the vital principle was located in the base of the brain, but considered the paper unsatisfactory in several respects.

Dr. CARTER BLAKE stated that he was at a loss to comprehend Mr. Hovenden's definition of life; of an atom; and of destructibility. He was unable to admit any other definition of a living thing than that which receives and assimilates external substances; and thought that

in such an important subject which affected the very foundation of anthropology, precise and accurate definitions should be given. He expressed his concurrence with Mr. Hovenden in his theory that heat was "matter," and not "force," but failed to understand his definition of an "individual." His definition might be good enough for man alone, but was not applicable to the lower forms of life. In them our ideas of individuality became complicated, and he adduced the tape-worm as an instance of numerous separate reproductive zoa on one scolex. With respect to the atoms spoken of by the author of the paper, Dr. Blake said it was difficult to understand what was meant by those atoms, whether or not he meant them to be reproductive germs, and the indistinctness on that part of the author's argument showed the importance of exact terminology, to the want of which the difficulty of understanding the author's ideas might, perhaps, be attributed. The subject of separate gemmules had been thoroughly worked out by Professor Owen and Mr. Herbert Spencer, and more recently by Mr. Darwin, in his theory of "Pangenesis." It was a theory, in fact, as old as science, and Mr. Hovenden scarcely threw fresh light on it. No cause had been assigned for fixing the locality of the assumed indestructible living atom in the head. There seemed to be no reason why it should not be seated much lower. The old Jewish Rabbis used to say that there was one part of the body which was indestructible (the bone Luz) and capable of reproducing the rest of the body at the day of judgment. The Jewish Rabbis, however, did not put that bone in the head, but in a very different part. In fact, it was the *os coccygis*.

Mr. DENDY said a great mistake appeared to have been made respecting Lamarck and Darwin, whose views were represented to be similar. Darwin's opinions and writings were often in opposition to the extreme doctrine of Lamarck. With regard to the terms atom and cell, there appeared to be some confusion. A monad might be atomic, a cell implies a globule vitalised; both were indestructible, they existed for ever in some form or other, for nothing that exists in nature ever dies. In that sense it might be said that man is indestructible.

Mr. BENDIR considered that the theory put forth by the author of the paper depended to a great extent upon Darwin's theory, and that the arguments adduced in support of it, so far as he could understand them, were derived from Darwin.

Dr. BEIGEL stated that the paper had been placed in the hands of the Society before similar opinions by Professors Tyndall and Huxley had been presented of the latter author, and remarked that it seemed curious that Professor Huxley constantly taught materialist doctrines, and constantly denied that he was a materialist. Though he was much pleased with the paper, there were several points in which he differed from the author. It was stated that organic atoms, as well as inorganic atoms, were indestructible; now he confessed he (Dr. Beigel) could not conceive that theory. An organic atom meant the first appearance of life; and life could be destroyed in any form in which it appeared; therefore, if an organic atom were the lowest form

of life it could be destroyed. But inorganic atoms could not be destroyed. It was true that some combinations of matter, chemically called atoms, might be decomposed, but, strictly speaking, they could not be recognised as atoms. Again was the author correct in asserting that there is in some part of the brain an indestructible vitalised atom? He was sorry to say that that was not so, though it was true that all the vital powers are concentrated at the base of the brain. That fact was sufficient to overthrow the theory of phrenology. With respect to the Darwinian theory, he did not agree with it, for reasons which he detailed.

Dr. CHARNOCK and Mr. GOULD AVERY also took part in the discussion.

Mr. HOVENDEN, in replying to the remarks on his paper, adverted to the objections that had been taken as to the want of definition of the term atom, and said that the ultimate particles of elementary substances must be atoms, for it could not be conceived otherwise than that by continued divisions they would come to an ultimate indivisible particle of matter, and that must be an atom. There had been a confusion introduced as regarded atoms and cells. He held that a cell was a very highly organised molecule—an aggregation of atoms, and developed from a germinal spot. He granted that it must be fructified, but it was not for him to consider what power aided to cause reproduction. With regard to Darwin's theory, he held that his position was not antagonistic to Darwin's, but agreed therewith. He was of opinion that new species were produced in succession, and that man, as we now saw him, was but a highly developed savage.

Dr. BEIGEL then made a communication respecting the *Siamese Twins*, whom he had had the opportunity of examining thoroughly. He said they were two separate beings connected together by prolongation of the hypertrophied ensiform cartilage which formed a ligament from the breast-bone of each. Such a connection, with full development of two individuals, was very rare, and had only once been described, and that was in the sixteenth century. The twins now exhibiting were from Siam. They were in every respect two different beings. They were different in feeling, different in opinions, and different in health, and the only thing common to them was that they had been accustomed for fifty-eight years to act as a single individual. They moved in the same direction without telling one another, exactly as a single individual would do. As to feeling, one was sometimes ill and the other not, one was hungry and the other was not so, one was sleepy and the other was not, and one had certain natural desires to satisfy which the other did not feel, which at times was troublesome and disagreeable. Their band of connection was merely an elongated cartilage from the bone of the chest, which passed from one to the other. It was solid, not hollow; was about seven inches long, and of the thickness of an arm. There was a difference in their pulse amounting at times to five or ten pulsations in a minute. There was no communication between the thorax of one and the other, but when one was coughing it seemed as if something were protruding into the connecting band. The two individuals could move their limbs separately with ease; and one of them plays the violin, the other the flute. The

separation might, he thought, be easily made without danger, but they would not allow it, and did not desire it. The opinion of Sir J. Simpson and of other eminent men had been taken on the subject, but the twins did not dream of being separated. They are married and have nine children, all grown up. From a medical point of view there was little of interest in the twins; the chief point of interest consisting in ascertaining the point in the connecting band where they feel separately, and where conjointly. For a space of about half-an-inch in the centre of the band both feel a prick, but beyond that space each one feels separately. If they were divided they would have great difficulty in acting separately; they would also have great difficulty in walking without their accustomed mutual support. If either of them were to die there would be time to separate them without injury to the living one. At present, however, they would strongly object to be separated; one reason for which was that the separation would take away their means of gaining money; it would take away their business. Dr. Beigel afterwards added, in reply to observations from Dr. Carter Blake and Mr. Dendy, that all the best medical authorities agreed that the band might be divided without danger.

The meeting was then adjourned.

MARCH 16TH, 1869.

DR. CHARNOCK, V.P., in the Chair.

THE minutes of the former meeting were read and confirmed.

The members of the Society elected since the last meeting were announced as follows:—

Fellows.—J. S. Thresh, Esq., B.A., Old Palace, Richmond, S.W.; Henry Hertz, Esq., 27, Fenchurch Street, E.C.

Local Secretary.—Frank W. Breach, Esq., for Sonora, Mexico.

The following presents were announced to have been made, and thanks were given to the donors:—

FOR THE LIBRARY.

From the AUTHOR.—*L'Homme Fossile en Europe, Histoire Complète de la grande éruption du Vesuve en 1681.*

From the ASSOCIATION.—Papers relating to the Geologists Association.

From the SOCIETY.—Transactions of the Ethnological Society of London.

From the AUTHOR.—*Wassergehalt des Gehirns.* By Dr. A. Weisbach.

From Dr. H. BEIGEL.—*Zur Lehre vom Milzbrand beim Menschen*, by Dr. Beigel; *Moderne Missionare*, by E. Hartenfels; *Memoranda der Specialen Physiologie des Menschen*, by J. Budge; *Platonis Opera*, 5 vols.—*Les Institutions Sanitaires pendant le conflit Austro-Prussien*, La Commission des Etats, *Essais d'hygiène thérapeutique*—T. W. Evans; *The Medical Quarterly Review*, 4 Nos.

From the AUTHORS.—*Materiaux d'Archéologie et d'Histoire.* By J. G. and S. L.

From the SECRETARY OF STATE FOR INDIA.—*The People of India*, 2 vols., 4to. By Watson and Kaye.

From the AUTHOR.—*Recherches sur la Synostose des Os du Crane.* By Dr. F. Pommerol.

Mr. Alfred Higgins exhibited a portrait of the late Professor Retzius.

Mr. PIKE then read the following paper :—

On the alleged Influence of Race upon Religion.—By

LUKE OWEN PIKE, M.A., V.P.A.S.L.

The discussion of religious subjects frequently excites passions which retard the progress of scientific truth ; and it is by no means improbable that I may be suspected, merely from the title of my paper, of a desire either to defend or to attack some particular form of religion existing in this country. I wish, therefore, to state, *in limine*, that I do not consider revelation to be within the province of scientific investigation, nor the meeting of a scientific society to be the fitting occasion for a confession of faith. Not only must bitter feelings be roused when the question is, whether a creed is true or false, but a fact of vital importance is forgotten—the fact that religious truth rests avowedly on *à priori* grounds, while scientific truth is unworthy of the name, unless it rests on *à posteriori* grounds. Religion is accepted, and must be accepted, with unquestioning faith, as by little children ; no scientific dictum can be adopted except as the result of observation and reason. To confuse one with the other, to call in one as an aid to the other, must, therefore, necessarily be detrimental to both. Science, built on revelation, is but “ the baseless fabric of a vision ; ” religion, built on science, has ceased altogether to be a mere revelation.

How then, it may be asked, can anthropology deal with any religious subjects in any of their aspects ? The answer to this question is simple enough, when a careful distinction is drawn between the revelation and the person accepting it : the former is beyond and above the enquiring eye of the man of science ; the latter may be studied in every phase of body and of mind. We can compare believer with believer in the expectation of discovering what is common to all believers alike ; but to speak of the absolute truth of a creed is, by the very form of the expression, to give up the appeal to the intellect, which can deal with nothing except what is relative.

It will be seen that the line which I have drawn allows very wide limits to the field of the anthropologist, and holds him back only at that point at which transgression would make enemies without any corresponding benefit. He loses nothing if he refrains from criticising the writings for which divine inspiration is claimed by the professors of any religion. He can still compare not only mind with mind, but class of mind with class of mind, nation with nation, race with race, in all the differences and all the resemblances which they exhibit in their faiths. And wherever no direct revelation is claimed, we may trace the growth of every superstition, discover its origin, and measure the intellectual capacity of those who believe in it, by the standard of

those who boast a higher origin for their creed. In short, the limit of good taste coincides exactly with the limit of utility.

In this paper, which I bring forward with great diffidence, as an introduction to one far more elaborate, "On the Psychical Elements of Religion," I have adduced evidence to show that differences of faith cannot be attributed to any single cause, even though it be as powerful as race. In that paper I shall endeavour to show that every human mind may pass through various religious phases, according to its capacity, and according to surrounding circumstances, but that the chief element of all religious beliefs is the same in kind if different in degree.

A careful inspection of facts leads irresistibly to the conclusion that difference of race is not the chief, nor even an important, cause of differences in religion. There are circumstances under which any race may profess any creed; and the race which displays the strongest tendency in one direction at one time may display an equally strong tendency in an opposite direction at another time. It is true that a real difference of race may be concealed under identity of language, and that identity of race may be concealed under diversity of language; but even after every allowance has been made for this most fruitful source of error, it can be clearly shown that religion is not an ethnic test.

If illustrations be drawn from Christianity in modern Europe, it will be at once manifest that a given religion is at least not co-extensive with a given language. Among the people speaking the various dialects of German, between the Baltic and the Danube, there are considerable diversities of faith. In the north Protestantism flourishes almost side by side with Catholicism; in the south, Catholicism has the field almost to itself; over the whole area the various forms of Protestantism are professed by a number inferior to that which professes Catholicism. And it must be remembered that although Catholicism is tolerably uniform, Protestantism is multiform; even in Northern Germany the Roman Catholics probably equal, if they do not outnumber, any other individual sect. Those Germans, therefore, who are Protestant, cannot be Protestant by reason of their Teutonism, if all are Teutons who speak the German language.

A discussion of the diversities of race which may subsist among the German-speaking peoples would be out of place in this paper. The subject is far too intricate to be treated incidentally. But an instance drawn from a district nearer to England will show that a form of faith is not only not co-extensive with a language, but not co-extensive with a race. Between Holland and Belgium there is no great natural barrier; the people in the south of Holland and the people in the north of Belgium speak closely allied dialects of the same language, and there is no reason, historical or anatomical, to suppose that they are of different blood. Yet the majority of Hollanders are firm supporters of Protestantism, and the Flemings no less firm supporters of Catholicism. A similar phenomenon may be observed in many of the Swiss valleys. There are many German cantons which are almost wholly Roman

Catholic,* and many others which are almost wholly Protestant,† and in many others, again, the numbers are not very unequally divided between the two creeds.‡ In the French canton of Vaud the Roman Catholics form but a small fraction of the population; in the partly French, partly German canton of Valais, Protestantism is hardly known; and in the French canton of Geneva there are about as many Protestants as Roman Catholics. In the canton of the Grisons, where the language is chiefly “Romonsch,” and where dark eyes and dark hair give evidence of Italian descent, the Protestants slightly, and but slightly, outnumber the Roman Catholics.

It has been supposed that the nations commonly called “Latin,” have an innate love of Roman Catholicism. No real student of races can suppose, in the first place, that the French, the Italians, and the Spaniards, have any such community of blood as can distinguish them collectively from the rest of mankind. Each of the three peoples differs considerably from the two others; and if it were true that they all have a tendency to accept the same form of religion, the fact would only show that religion is influenced by causes of which the sum is far more powerful than the single cause of race. The truth, however, is that the preference of these three nations for Catholicism is only apparent, has been remarked only in recent times, and cannot be followed up the stream of history. It will not be forgotten that France produced the Huguenots; it is hardly so well remembered that the very hotbed of mediæval heresy was not England nor Germany, but the district which should, according to the “Latin” theory, have been most Catholic, the district lying between Vaud and Navarre, the district connecting the three “Latin” nations. There sprang up the Albigenses, Publicans, Paterines or Catari, the Waldenses, the heretics of Arragon, and the heretics of Navarre, all accursed of the Church in the twelfth century.§

Any theory, therefore, according to which the various phases of Christianity are forced to correspond with certain alleged ethnic distinctions, must be in direct contradiction not only to the facts of ethnology, but to the most indisputable historical evidence. Even the history of religion in the British isles strongly confirms the opinion that, although the tendency to accept a creed of some kind is apparent everywhere, the tendency to accept a particular form of faith is not the birthright of any nation. A stubborn resistance to the undue assumption of authority has characterised alike English, Welsh, Irish, and Scotch; and the creed which has in each nation shown the greatest vitality, is that which has been, for each nation, the badge of resistance. When Augustine landed in England, the Welsh, Irish, and Scotch Christians were found to differ from the orthodox Romanists, both in doctrine and in ritual. A furious controversy en-

* *E. g.*, Lucerne, Uri, Schwyz, Unterwalden, Zug.

† *E. g.*, Zürich, Bern, Glarus, Bâle, Schaffhausen.

‡ *E. g.*, St. Gallen, Aargau, Thurgau.

§ *Chronic. Gervas.*, 1141. (*Ap. Decem Scriptores.*) For the appearance of the Paterines, or Publicans, in England, see Will. Newburgh, ii, 13, and Walter Mapes, *De Nugis Curialium Distinct.*, i, c. 30.

sued ; and though the Archbishop of Canterbury, at length, was recognised as the Primate of the Britons, the church in England and Ireland soon assumed an attitude of determined opposition to papal domination. Quarrels were frequent until the time of the Reformation, when both Irish and Welsh, misled by differences of language, considered the English to be of wholly different blood from themselves. In Ireland, the spirit of antagonism gradually took the form of a bigoted attachment to the Roman creed ; in Wales, though the inhabitants were nearly akin to the Irish, the very same spirit gradually developed itself into the extreme of Calvinistic dissent. In the lowlands of Scotland, where there is more Teutonic blood than in any other part of Britain, the religion has assimilated itself to that of Wales, where Teutonic blood can hardly be found. In England, also, Calvinism is rapidly developing itself ; but as though to prove that no one creed is better adapted to the English character than another, there is a multitude of sects, each sustaining itself by conflict with its rivals ; and in America, the multitude of sects is greater than even in England.

It may, however, be thought that minor differences are of little importance in comparison with the existence of Christianity, in one form or other, throughout the whole of Europe, and that in order to discover whether religion is or is not coextensive with race, we must compare the professors of Christianity with the professors of other faiths. Before the connexion of race with religion could be established on this basis, it would be necessary to demonstrate that the difference between races professing Christianity, and those professing other religions, is greater than the difference between the various races professing Christianity itself. But no one who has given attention to this subject, in its anatomical bearings, would be prepared to maintain such a proposition. No one would maintain that a Jew differs more from an Englishman, than the Englishman differs from a Christian Negro ; or that a Mohammedan Turk differs more from a Jew, than a Christian giant of Galway differs from a Christian dwarf of Auvergne. The theory, once not unpopular, that races speaking Semitic languages, are monotheistic, and races speaking Aryan languages are polytheistic, is hardly worthy of serious refutation, when it is remembered that the latter races differ quite as much from one another, as any one of them differs from any one of the former class. The swarthy Hindoo has far less in common with the white-haired Swede than the Neapolitan with the Egyptian ; and the Spaniard is more like his Mohammedan conquerors from Africa, than his fellow Christians on the Rhine.

When we read how Buddha, who spoke one of the Aryan languages, and whose first converts were natives of India, has had the most important influence upon the religion of China ; when we see the faith of Mohammed rapidly accepted by Arabs, by the various tribes of Africa, by Turks, and even by Hindoos ; when history tells us how all the gods of the conquered provinces found not only altars and temples, but worshippers at Rome ; and when, in our own time, we teach Christianity to the savage, we may fairly wonder how the

theory could have arisen that Faith is connected with race. It might, however, reasonably have been expected, on *à priori* grounds, that such a connexion would have been discovered ; and hitherto the expectation has been taken as equivalent to the fact. The strange, and, at first sight, inexplicable distribution of religions, which actually exists, may, perhaps, be rendered a little more intelligible by the following considerations.

Except in the case of our most intimate friends, we never know thoroughly even the religion of our contemporaries. The broad general outlines are commonly accepted by whole nations or numerous sects, but the details are filled in according to the disposition of the individual. Terrible religious wars are, it is true, frequently fought about mere words ; but the words are always supposed to represent some very important difference of creed. Subtle, however, as the refinements of language may be, they are not so subtle as the refinements of the human mind, when there is a desire to reconcile interest with faith. The missionary cannot be certain that his proselyte accepts his doctrine in precisely the same sense in which he accepts it himself ; and even persons who are in the habit of daily association with each other must always remain in ignorance each of the intricate workings of the other's thoughts. Even when there is no hypocrisy, a formula may be adopted by one person in one sense, by another in another ; and a man may be possibly guiltless, even of self-deception, who adapts his religion to himself, rather than himself to his religion. When this imperfection of language, as an interpreter of thought, is borne in mind, it is no longer very difficult to understand why different races are apparently of the same religion, and why different sections of the same race are apparently of different religions.

The facility with which, as history tells us, new religions are accepted by vast masses of mankind, though it may cause us to despair of ever isolating and examining by themselves the race-elements of faiths, affords great encouragement to the hope of discovering what is common to all faiths alike. There must be some mental faculty or faculties shared by all, or nearly all, human races, which must dispose them to accept not any particular creed, but a creed of some kind or other. To follow all the twists and turns of a convert's mind, would be, in the present state of science, and probably in any state of science, impossible. It is hardly possible to conceive such an advance towards the perfection, at once, of language, of psychology, and of honesty, as would enable any one human being to know precisely the state of consciousness of another. All that we can hope to do is to agree upon some definition of elementary mental phenomena. When certain divisions of psychical manifestations are admitted, it will be possible to arrive at a definite conclusion upon two points:—firstly, whether any, and which psychical elements are necessary to the development of religion ; secondly, whether religion is a necessary function of the human mind in a healthy condition. Upon these two points, however, I do not as yet invite discussion. My object, in the present paper, is to clear off certain prejudices which appear to lie in the way of truth. I found it impossible both to do this and to lay

down more positive principles within the limits of a single lecture ; and I have, therefore, to apologise for dividing my subject into two parts.

In these preliminary remarks, which might have been extended indefinitely, I have endeavoured to be as brief as possible, because it seems to me that I have adduced sufficient instances to invalidate any supposed law, according to which race models religion. No set of instances pointing in an opposite direction, can, I think, establish such a law in the face of these glaring contradictions ; and I am, therefore, content for the present to let my opinion rest on the evidence which I have adduced. But, as I am aware that views opposed to my own are entertained by very distinguished anthropologists both here and abroad, I am most anxious to hear all that can be said against the following position :—

That although there may probably exist certain race-elements in the religion of every people, they are of minor importance, and cannot be defined in the present condition of language and psychology.

Dr. CARTER BLAKE, whilst complimenting Mr. Pike on the great forensic ability and rhetorical skill with which he had advocated his theory, dissented strongly from the general conclusions drawn by the author, and from the particular instances from which they had been derived. As regarded Europe, there was a broad distinction in religion between the Teutonic natives of the north and the Celto-Romanic natives of the south [in illustration of that opinion, the speaker exhibited a rough sketch-map of Europe, coloured to correspond with the religious creeds of the majority in each nation]. There was a great amount of agreement between the distribution of the Celtic race and the Roman Catholic religion, between the Teutonic nations and the various sects of Protestantism, and between the Slavonians and the Greek church. In fact, there was a considerable number of what Lord Bacon called *instantiæ comitatus* between geographical distribution and religious faith. He would take, for more particular illustration, five distinct instances: viz., the Belgians, the people in the north of France, Switzerland, the Welsh, and the inhabitants of the highlands of Scotland. Mr. Pike asserted that the people of the south of Holland and of the north of Belgium were the same race, and yet their religions differed. But the facts were not so, as had been shown by Dr. Lubach. The people of the south of Holland and of northern Belgium were not of the same race. The Hollanders themselves were not of one race. There were, indeed, great differences of race among the people of Holland, and also among those of Belgium. In Holland, there were Frisians, Low Germans, a mixture more or less of the two, and also a mixture with the Wallons. [The map from Dr. Lubach's *Natuurlijke Historie van Nederland* was here exhibited.] The Flamand population were Gothic, Frisian, Franks,—perhaps a portion of Celtic blood,—and their cranial indices differed. The Wallons were composed of Celts mixed with the ancient Belgæ and with the French. The religion of the Belgians was now ultramontane, which nucleated in the Wallon district. The Dutch of Southern Holland, in the days of their ancient civilisation,

were generally Catholics, but now a large proportion of them were Protestants; and the numbers of the two agreed precisely with the difference in the character of the population and their ethnography. Secondly, in the south of France, in Languedoc, the heretical sect of Albigenses arose; and in the canton de Vaud Waldenses sprung up, where the French blood was most mixed with the outlying elements of the old Ligurian natives, which stretched from the Pyrenees to the Alps. In that district, occupied by a short-headed people, the heretic sects abounded; not, let us remember, in a purely Celtic or "Latin" area, but where the Celtic blood was most mixed. Thirdly, with regard to the Swiss, if they were of mixed blood, they could be of no value in support of Mr. Pike's argument, and if they were of pure blood, they told against him. The *crux* of this dilemma must prove destructive to his argument. But, in point of fact, Rüttimeyer and His had described four distinct races in prehistoric times, which had since received importations from French, Germans, and Italians, making seven distinct elements in all. So much for the purity of that Chauvinism which culminated in Geneva. Fourthly, as to Wales, it was stated in the paper to be the focus of Protestant dissent, and if it were attempted to prove that the Welsh were a pure Celtic type, that might be of value; but though the Welsh were a Celtic people originally, there were several types in Wales, as Mr. Pike, in his own work, "On the Origin of the English," had admitted. Fifthly, as to the highlands of Scotland, the Presbyterian sect prevailed, there was no doubt; but in the Island of Skye, which was a nucleus of pure-blooded Celts, the Roman Catholic faith was generally held until a comparatively late period; and it was only among the population of Scandinavian origin that Protestantism was predominant. Such clans as McGregor and McIvor were examples of those who had clung to the ancient faith. The Celts remained pure Roman Catholics for a long time; but the Scandinavians came in at a later period, and introduced and maintained Protestantism among them. So far from agreeing with the paper, it was his express belief that the whole question of race and religion was closely allied. The race produced religion, which is an integral part of the whole man, and the form of religion adopted was a character of the individual race. Religion, he contended, was as much an integral part of man as the form of his skull, the colour of his hair or eyes, his style of dress and music, his propensity to inductive or deductive ideas, or his mode of combat, and was inseparable from his existence. In conclusion, Dr. Blake remarked that, of all days in the year, the eve of St. Patrick's day was the most inappropriate on which to read a paper affirming that there was no connection between race and religion.

The Rev. DUNBAR HEATH, while complimenting Mr. Pike for his paper, as being well written and closely argued, said he was more inclined to agree with Dr. Carter Blake, but he would take a broader view of the subject by not limiting religion to Christianity. They should have gone farther than Europe, for the Christian religion was itself derived from three racial sources—Persian, Hebrew, and Alexandrine Greek. If they extended their views to the east it would

be found that there was something in difference of race corresponding with difference in religion. The Semitic races had an idea of the Deity different from that of the Aryan races, and the difference between those ideas corresponded with the difference in their characters. To certain Asiatic races the idea of a Deity was that of an inactive being. They conceived him to be like a king surrounded with slaves who ministered to him on his throne ; that notion being their highest idea of a monarch, they conceived the Deity to be similar. But the Aryan races had the idea of an active and working Deity, and the difference between them in character was founded on those different ideas. The Christians had both elements in their religion when it was transplanted into Europe, and one element might prevail in one place and the other elsewhere.

Mr. AVERY said, in regarding religion as a matter of scientific investigation, we must go deeper than the peculiarities of creeds, or the teachings of real or pretended revelations. The derivation of the word defines its philosophical meaning (*re ligo*) ; religion is that which binds man to the unseen, the eternal, the Divine, and is thus the basis of moral obligation. Regarded in this light, man may be defined as a religious animal, for he everywhere and always has something that confesses his recognition of the unseen. In speaking of the influence of race on religion, I will confine myself to two nations among whom the racial characteristics are marked and distinct, the Irish and the Welsh. The old Irish are Celts, with a small Iberian element ; the modern Irish, the descendants of English and other immigrants, being generally Teutons. The ancient Welsh, too, are a Celtic race, with a numerous Teutonic population. But in both these countries there is, so far as I have ascertained, little intermingling of the races, and, in Ireland especially, the distinction is palpably preserved. The Teuton race is everywhere remarkable for self-reliance and independence of thought and action. In politics he adopts a constitutional system, which is, in effect, self-government ; in local and municipal matters, he dislikes government interference, and in all his affairs he will not allow that to be done for him which he can do for himself. The Celt, on the contrary, prefers a vigorous personal government ; he traces his prosperity or otherwise, to the action of his rulers, and in his general affairs he likes that to be done for him which the Teuton will do for himself. Turning to the other branch of the subject, religion, as it exists on these islands, presents two general characteristics, that of those who believe in a human mediation between them and the Deity, and those who reject such a mediation. The Catholic receives his creed from the Church : he makes his confession to a priest ; he offers his prayers through the Virgin or the saints ; and his priest is everything to him in matters of religion. The Protestant, on the contrary, draws his creed from what he believes to be a Divine revelation : he worships God in spirit ; he offers his confession and prayers himself to God alone ; and he attaches very little importance to human authority in matters of faith. Now, the Irish Celts are uniformly Catholics ; and the Celts of Wales, though Protestant Dissenters, pay a deference, and attach an importance to their ministers far greater than do the English.

The Teutons in both countries are Protestants of the English type ; and while I see in these conspicuous instances the racial characteristics and the forms of religious belief thus remarkably harmonise, I cannot but believe that race has a great deal to do with religion.

Mr. GEORGE CAMPBELL disagreed from Mr. Heath respecting the preference of the Semitic peoples for a passive Deity, and he adduced the Arabs as an opposite example. The Deity whom they worshipped was conceived to be active in a very great degree, for all Mahomedans referred to God as regulating the actions of everyday life. The natives who worshipped a passive God were very different ; whence they derived that notion was not determined. He was inclined to think that it proceeded from a feeling akin to Darwinism—in a negation of God, and a belief in nature as the regenerative and elevating power, by means of successive births and transmigrations. That feeling prevailed, to a certain extent, among the early Dravidians, and, through them, among the Turanians. As to the Aryans, the distinction was to be observed among them, that one class was more imaginative than another, and had a tendency to a belief in the existence of a host of deities, who came down from Heaven to earth, and took part in the affairs of men. That belief prevailed among modern Europeans of the Roman Catholic faith, as well as among the earlier Hindoos. So among the modern natives of India might be traced a distinction between those who affected an imaginative form of religion, accompanied with great deference to rajahs, priests, and people in authority ; and another class more nearly allied to Northern Europeans in religion, who rejected the excessive authority of priests, and whose religious forms were more dry and less imaginative.

The Rev. DUNBAR HEATH asked Dr. Campbell if the Arabs were not fatalists, and whether, though their God might be assumed to interfere in the affairs of life, they did not suppose all events to be fixed by Kismet, or fate, and, so far, he was therefore passive ? Was there anything in the religion of the Arabs like the idea of a God coming down to earth and working for the benefit of mankind, and even suffering death on the cross ?

Mr. CAMPBELL replied that the belief in fatalism among the Arabs amounted to exactly the same thing as the belief in predestination among Calvinists. The Arabs attributed all events to the immediate action of God in the affairs of this world, and he could not undertake to reconcile that view with predestination, as respects either Calvinists or Mahomedans.

Mr. LEWIS made a few remarks, pointing out some general differences in religious character between the Celtic and Teutonic races.

Dr. NICHOLAS said that so far as he understood the paper, it was admitted that race had something to do with religion. When it was stated that race was not the chief cause of differences in religion, it seemed to be intimated that race, if there was such a thing as race, might at times have some influence at least on the forms of religion, though it was not the main cause in determining the religion of a people. The question was, in the main, an historical one ; and the

fact was, that the same race, or division of mankind, in different parts of their history, had adopted different forms of religion. It was clear that all races agreed in this—they had all a tendency to religion in one or other of its forms. The old definition of religion in the abstract need not be improved upon, as a force binding the minds of men to the supernatural and to moral duty. When they spoke of Protestant and Catholic in the Christian religion, and of different kinds of Deity among the different religions of the world, they only referred to the different concrete forms assumed by the same essential thing. All nations, he thought, were capable of adapting themselves to every kind of religion; and Christianity, especially in its simple Scriptural form, was capable of being assimilated to the minds of all the nations of the earth. Nor should it be forgotten that Protestantism and Roman Catholicism in the Christian religion arose from principles in human nature which had their developments in all the other great religions of the world. Protestantism was nothing else than the assertion of personal liberty to think, believe, and worship. Roman Catholicism was nothing less than priestly government curbing and over-riding that liberty. Those manifestations of human tendencies towards personal freedom on the one hand, and priestly assumption on the other, were found, under different names, in all religions and among all nations, and that was proof, as he thought, that race had little or nothing to do with determining whether a nation should be Protestant or Catholic.

Mr. BREWER said that he had been travelling in Germany during the greatest portion of the last ten years, and he was astounded to hear that night Germany described as a "Protestant country," for the Roman Catholics formed a large majority of the people, in the proportion of three to two, the relative numbers being 18,000,000 Roman Catholics and 12,000,000 Protestants. In Holland, the Roman Catholics formed one-third of the population, numbering 1,200,000, out of the entire population of 3,416,521. Mr. Brewer then proceeded to defend the German "Prince Bishops" against some grave charges made by Mr. Lewis; he pointed to the superior condition of the inhabitants of the districts over which they ruled when compared to the neighbouring states, as a proof that their government was beneficial and enlightened. (Mr. Bendir here rose to order, pointing out that the subject was irrelevant, and Mr. Brewer sat down.)

Mr. McGRIGOR ALLAN dissented from the main principle laid down by Mr. Pike, for it would be difficult to account for the many religions in different parts of the earth, unless the fact were attributed to differences of race. If race had no influence on religion, how was it that England had not been able to make the Irish Protestants? He agreed with Mr. Heath respecting the causes of the distinctive characters of the Semitics and Aryans. Although there had been a great change in religion in Europe since the introduction of Christianity, Paganism had not altogether died out, the relics of which were still to be seen in the Roman Catholic religion. He entirely agreed with Mr. Avery in regarding man as a religious animal, and he

considered that was the only fundamental characteristic distinguishing man from the lower animal, for no animal was religious but man. To ignore this distinctive feature of man was to stultify anthropological science.

On the motion of the Rev. Dr. KERNAHAN, seconded by Mr. M. D. CONWAY, the discussion was then adjourned to the next meeting, on the 6th of April.

APRIL 6TH, 1869.

T. BENDYSHE, Esq., V.P., in the Chair.

The minutes of the previous meeting were read and confirmed.

New Fellow.—Geo. Atkinson, Esq., Cottimore, Walton-on-Thames.

The following list of presents was announced, and thanks were voted to the donors:—

FOR THE MUSEUM.

From Dr. DUNCAN.—Twenty-nine Photographs of Imbecile and Idiots.

From TOM CRASTON, Esq.—Skull of Chimpanzee.

FOR THE LIBRARY.

From the SOCIETY.—Proceedings of the Royal Society, No. 109.

From M. A. QUETELET.—Mémoires de l'Académie Royale de Belgique, f. 37, 1869; Annales Météorologiques de l'Observatoire Royal de Bruxelles, 1868; Observations des Phenomenes, 1865-6; Bulletins de l'Académie Royale de Belgique, 1869.

From Dr. DOWN.—Progress and Prospects at Earlswood Asylum, by Rev. E. Sidney.

From the ACADEMIE.—Bulletins de l'Académie Imperiale des Sciences de St. Petersburg, tom. xiii, f. 1, 2, 3.

From the U.S. GOVERNMENT.—Catalogue of the United States Army Medical Museum; Circulars ditto, No. 6, 1865; Nos. 5 and 7, 1867; and No. 1, 1868.

From the AUTHORS.—Sketches in the Isles of Scilly, by W. C. Dendy; Antediluvian History, by Rev. E. D. Rendell.

From Dr. PAUL BROCA.—Mémoires sur les Caractères physiques de l'homme préhistorique.

From GEORGE TATE, Esq.—Proceedings of the Berwickshire Naturalists' Club, 1868.

From J. BONOMI, Esq.—Catalogue of Egyptian Antiquities of the late Robert Hay.

From M. le Comte SAGE STROGONOFF.—Compte Rendu of the Commission Impériale Archéologique, with Atlas.

The adjourned discussion on Mr. Pike's paper, "On the Influence of Race on Religion," was then commenced by

The Rev. Dr. KERNAHAN, who thanked Mr. Pike for bringing this important subject before the Society in his valuable paper. He admired the paper more for its suggestiveness than its conclusions. He felt it only due to the gentlemen who had taken part in the discussion of the last meeting to say that he considered it highly creditable for the

ability and fairness displayed on both sides. The question was not as to the origin or nature of the religious feeling in man, but rather as to the cause or causes which determine the particular form of faith and worship professed by a nation. Undoubtedly there must be some deep and powerful cause, for, as Mr. Bright had said in the House of Commons on the Irish Church question, there is no subject on which a nation is so sensitive as that of its religion; and the comparative failure of the great missionary societies shows how difficult it is to induce a people to change their religion. Now a careful study of history had led him (Dr. Kernahan) to the conclusion that the main causes of different faiths in the world are geographical situation and racial peculiarities. He could easily imagine how, under certain conditions, men would feel disposed to worship the heavenly bodies; he could also understand that where nature is stern and awful similar attributes would be ascribed to God, and that, on the contrary, where nature is mild and beautiful the Deity would be viewed in the same light. He could understand that where the climate makes rest desirable God should be represented in a state of perfect quiescence; and, on the contrary, where activity is demanded, the Deity should appear as an Almighty Worker. But he believed that the chief cause of religious peculiarities is to be sought in racial characteristics; for, even where a people have changed their religion, either through conquest or proselytism, the racial characteristics still disclose themselves—a fact to be seen all over Christendom, for Christianity owes its distinct colouring in different lands to the underground realities of race. The peculiar forms of faith in the world seem to have originated in common notions; but each people has had its great teacher, its dominant mind, who, absorbing in himself the scattered ideas around him, reproduced them in a definite creed and worship. As ages rolled on, people became acquainted with each other, and borrowed religious ideas; and it seemed to him that Christianity is fitted to be a religion for the world, in that it is vitally related on some side to every known form of faith and possesses the primary elements of all religions. In support of his view, Dr. Kernahan referred to Buddha, Menu, Confucius, Zoroaster, Moses, and, on the side of the historical development of Christianity, to Jesus and his Apostles. He quoted the late Rev. F. Robertson, of Brighton, to show that Divine Providence appears to have committed to each nation the propagation of some particular truth and the discipline of some special part of humanity, and hence that all religions were included in the Divine education of the world, and all contributed their share towards the solution of the great problems of human life and destiny. He felt thankful for the light of anthropological science, and hoped the day was at hand when statesmen, philanthropists, and Christian ministers would be guided by the facts of science. If they, as a society, were only faithful to truth he felt certain a great future lay before them. He renewed his thanks to Mr. Pike for his able paper, although differing from his conclusions.

Mr. BENDIR said that hitherto all competent anthropologists had been of opinion that race influenced very materially every perceptible expression of the human mind, and in their descriptions of the charac-

teristics of races all men of science were in the habit of including the various manifestations of mind. Religion was generally considered to be one of those manifestations, and a very important one too ; if Mr. Pike objected to a doctrine accepted by all his learned *confrères*, he ought to have proved, either that race could be traced in external characteristics only, or that religion was not the expression of the human mind. Dr. Beigel had attributed religion to two causes : fancy and habit ; he (Mr. Bendir) ventured to add one additional cause : ignorance ; and the history of religion could be divided into three periods, in each of which one of those causes was in operation. The first period, the stone-age of the human mind, was one in which, from want of knowledge of nature and her laws, a kind of religion prevailed which was based upon fear and hope, the former overbalancing the latter. Then the mind, uninformed by science, was prone to worship sun, moon, and stars ; everything, in fact, that was beyond the grasp of the hand excited apprehension and wonder, so it became an object of veneration, or a Deity. Ignorance must, therefore, be called the first cause of religion, *i.e.* the religion of the savage. The second period would be the mythological one, in which fancy, as Dr. Beigel termed it, played so important a part. Mythology, in its beginning, had a local character ; its priests and sages would try to extend their influence beyond their locality, and ethical or moral teaching might appear to them a useful addition when they had to deal with communities already advanced in the scale of civilisation. Thus a religion would spring up, partly mythological, partly ethical, and capable of being propagated. If dying out in its original abode, it may live and flourish in other lands and amongst other nations. In course of time they would add to and take away from it according to their racial capabilities and requirements ; they would reform one doctrine, protest against another ; some rites would be abolished, or sink into oblivion ; others would assume a prominence never dreamt of by the original inventors ; and by and bye the original religion and its alien offspring would be the same only in name. Some cherished old records, some symbols (say a crescent or cross) would be found in both, but in essentials the difference between them would be as wide as the racial difference that separated one nation from another. Fancy—hardly a precise term—having once been used by Dr. Beigel, it could not now be discarded ; but what were fancy, what imagination, what taste, if not manifestations of the mind of man, and subject to the laws of psychology. In art, fancy, or taste, produced according to racial endowments, here a Greek statue which we admired ; there an Aztec imagery which we abhorred. Languages, literature, music, were manifestations of the human mind, and, as such, the influence of race was in constant operation on them ; why should religion be treated differently ? Mr. Pike said that it should because we saw the same nations adopting one form of religion at one another at a subsequent period ; he noticed races differing widely *inter se* accepting and nominally professing the same religion ; he felt, therefore, a difficulty in tracing the alleged influence of race on religion. This difficulty appeared to him (Mr. Bendir) capable of removal. Mr. Pike

had omitted to look at his subject from a point of view which was indispensable for its illustration. Was there no difference between originating and professing a religion? was there no difference in composing an oratorio and attending at its performance, or even singing in the chorus? was there no difference in originating a system of law and practising it? was the corpus juris not the creation of the Roman mind, because it formed the basis of all law in Europe during and since the middle ages? was the Latin language valueless as a test of race, because it was the common source of four or five idioms which now differ from each other? He maintained that if anthropology taught anything, it taught us that language in its origin depended, to a large extent, upon race and racial endowments; a language may be displaced, but modifications and alterations took place in the adopted or acquired tongue, which were again the result of race. Mr. Pike, being an accomplished linguist, there was no need to give him details in proof of that assertion; but if anybody doubted it the differences existing at present between the languages spoken in Italy, France, and Spain could be adduced as proofs of the action of race; the religions of those countries, too, were the same in name, but in reality not identical. How could that be explained unless it were done by the theory which Mr. Pike dissented from? Was Calvinism the same in Edinburgh and in Geneva? Did not Buddhism vary on the plains of the Indus and in the mountains of Tibet? All these questions could only be satisfactorily answered by admitting the influence of race on religion; but there was still some merit in Mr. Pike's paper, because it held out a warning to us not to ascribe everything to race, and to try to explain too much. The invention and birth of a religion (theologically called revelation) may be, nay it must be, due to race, although not necessarily to race alone; but many inventions and original thoughts became common property of humanity, and often were applied and used without reference to their origin; that may be the case with religious and philosophical systems without the well founded and generally accepted law as to race being invalidated. How could it otherwise be accounted for, that both religions which had been, for a time, eminently successful in their aims at universality, were of Semitic origin? Christianity, the offspring of the Israelite, and Mahomedanism, the offspring of the Arab mind, were they not both the children of race, bearing their parental image engraven on their faces? And the perversions or imitations of these creeds had sufficed for Western Asia and Europe, and all their colonies, where the creative element of religious thought appeared since to have been extinguished; but every race had only retained of those religions what it could understand and use, had altered what was unsuitable, and there were as many religions as racial differences existing now. Dr. Beigel's "fancy-and-habit-theory" did not explain these facts, nor did Mr. Pike's denial of the law of race in religion; still *habit* explained something; we were in that third period now, in which habit could properly be called one cause of religion; there were reasons which led him to think that people very often did neither fully nor sincerely believe in the doctrines of the creed they professed; they did not change it publicly, because

other creeds appeared equally or more objectionable, they remained what they were by force of habit. By such circumstances, witnessed every day in England, France, Germany, and elsewhere, the influence of race on religion became rather obscured amongst highly civilised communities consisting of thoroughly mixed races, always a dangerous element of anthropological calculations; and sometimes erroneous conclusions, like Mr. Pike's, resulted from observations confined to the nations of modern Europe.

Mr. CONWAY thought the consideration of comparative mythology had an important bearing on the question of ethnical religions. All religions had undergone the influence of change, and were liable to be modified, like varieties of species, by natural selection and the struggle for existence. Like the races among which they have existed, they survive or pass away: some are allowed to live and propagate themselves, and fulfil their possible modifications; others are reduced, mixed, or exterminated; and all the great religions in the world were probably formed and developed in that way. If they looked back to the foundation of any new religion it would be perceived that every founder of a new religion retained much of the forms of the religion that was supplanted, and that nearly all religions were costumed in a legendary dress of singular uniformity. There was a kind of stock set of fables and ideas which reappeared in the origin of most of them. However, though they were thus sheathed similarly at first, they blossomed out into different forms of religion, strictly according to the peculiarities of the race with which either of them existed. Thus the Persian religion opens with the same story as the Hebrew. There was in both the finding of a wonderful baby that grew up, narrowly escaping a hostile king in infancy, to perform wonderful deeds, and bring laws from a flaming mountain-top. Yet the Hebrews, out of their legends, evolved a rigid moral law, and the Persians, out of the same set of legends, founded their more cheerful system, in which, though the devotional element was preponderant, there was no asceticism nor sabbatarian law. It was not possible among some races to establish a sombre religion. This difference of sombreness, or cheerfulness, in religions, followed racial distinctions; thus in the southern countries of Europe, where Roman Catholicism prevailed, it took a cheerful form. Though doctrinally they believed in hell, nearly all persons who died were supposed to go to purgatory, and very few indeed supposed to be condemned to hell; while in other religions the mitigated tortures were excluded, and the doctrine of eternal punishment for evil-doers of all degrees prevailed. Certain features of the same religion become all-important with one race, but are reduced to incidental importance with others. The greatest difficulty is to decide whether racial differences, or geographical circumstances, are most influential in these things. In countries where serpents abounded, for example, those reptiles played an important part in the systems of religion; while in other countries, where there are no serpents, they scarcely appeared in the religious creeds. Though there was a great resemblance in the religions of all people which might be traced to a few common ideas, yet in their diffusion through the world they had been adapted to characters and

dispositions of the people, influenced by the country they inhabited. The same causes, he considered, which had produced differences of race had produced differences of religious belief.

Dr. HUNT said he was much pleased with the discussion on the paper, which he considered did much credit to the Society. The consideration of the subject had not, however, been brought forward in a manner favourable for discussion, and he hoped it would be stated more fully on some future occasion. The paper did not state what religion is; and when next the subject was brought forward he hoped they should be able to discuss it in all its details.

Dr. CHARNOCK said, the term "race" implied the unity of mankind, the common origin of mankind; race therefore must influence religion. The radix must influence the stem, the stem the branches, &c.; but the author of the paper no doubt used the term "race" in the common acceptation of the word, and the discussion had degenerated into the "Influence of Religion upon Race," which ought to have been the title of the paper. Mr. Pike's papers were usually confined to Europe; in the present instance he had patronised the Hindoos. Dr. Charnock thought that in the East other examples might have been given. For instance, in the Philippine Islands there were two millions of Roman Catholics, and in Ceylon six hundred thousand; then there were the Thibetans, a so-called Turanian people, who were Buddhists, and the Brahmins and Buddhists who formerly dwelt side by side in India, and were without doubt of the same race. There were Arab Christians, and Christians that had gone over to Islam; some of the Kurds were Mohammedans, others were Christians, and some worshipped the devil. Let us now look at Europe. In Transylvania there were Roman Catholics, Lutherans, and Unitarians; and of the two million Slovaks in Hungary, one half were either Lutherans or Calvinists, whilst the other moiety were Catholics. Mr. Pike stated that in Southern Germany the people were Catholics, and that in the north Protestants and Catholics were living side by side. Now the Southern Germans were mixed with Slaves and Celts; the Bavarians were derived from the *Boii*, a Gallic tribe. In Northern Germany the so-called Protestants were partly Pantheists, partly Gallios. What Dr. Carter Blake had observed with reference to the Swiss, the Languedocians, and the peoples of Belgium and Holland was quite correct; the Swiss were made up of Germans and Celts, the Languedocians of Celts, Goths, and Spaniards. There was a great difference between the Flemish and the Dutch; no doubt both peoples were compounded of Frisians, Batavians, and Franks. The Flemish were however largely mixed with Wallons, and perhaps also with the ancient Belgæ. Some of the Belgæ passed over to the south of England; others to Ireland, where they were called the *Fir Bolg*; but it was not likely that all of them left their native country. They were probably a Gotho-Celtic people; Belgius or Bolgius was the name of a leader of the Gallic army that invaded Macedonia and Illyria in the third century B.C. As Mr. Brewer had very properly remarked, one-third of the people of Holland were Roman Catholics. Most of the Limburgers were Catholics and Wallons. The author of the paper had said that the Flemish spoke the same

language as the Dutch. At the present day however the Flemish peasants found as much difficulty in understanding the Dutch as they did the French language. Mr. Pike said that now-a-days we succeed in converting savages to Christianity. Dr. Charnock did not believe in the conversion of savages ; it was the same with the gypsies, who were of the religion of the peoples among whom they chanced to be located. Mr. Pike assumed that Buddha spoke one of the Aryan languages ; the term "Aryan" was only a little less absurd than "Turanian;" the only district that could be properly called *Aria* was the country round Herat. No doubt Buddha spoke Sanskrit, a language which formed the base of nearly all the European languages. The author of the paper might have referred to the trivial causes which had induced peoples to change their religion. In the first decade of the sixth century the Thibetans became Buddhists, and remained so until the beginning of the tenth century, when Dharma ascended the throne, and changed the religion to that of Islam. That monarch reigned about twenty-five years, and having been slain by some patriotic priest, the people returned to Buddhism ; and, at the present day, Tibet, in the language of the books, is "the stronghold of Buddhism."

Dr. DONOVAN wished that Mr. Pike had clearly defined the sense in which he had used the term religion. All persons who believe in a God are, so far, of one religion—are Theists ; all Christians, no matter of what denomination, are of one religion. But systems of theology are very numerous ; and of these it is possible that as some creeds call for more submissive faith than others, one creed may be less acceptable to the Saxon than to the Celt. Mr. Pike, in denying this, seemed to fight with a hypothesis of his own making, not combating any one's averment. The question is very intricate and delicate, and he, Dr. Donovan, doubted the expediency of bringing forward such a topic for discussion in this Society. One probably good effect might however result from the paper, namely, the settling of a question that had arisen as to the religious opinions of some of our leading members. For we have heard one of our Vice-Presidents, Dr. Beigel, declare that he does not know what religion is, and then defined it to be "a thing of incantations, and such like matters of no account ;" whilst another Member, Mr. Bendir, declared religion to have originated in ignorance. It must be obvious that such declarations amount to no less than direct atheism. For if religion be what Dr. Beigel and Mr. Bendir define it to be, the idea of a God is at once discarded. Such is not his, Dr. Donovan's, estimate of religion and of God. Mr. Avery's definition of religion left Dr. Donovan little to add. He, Dr. Donovan, deemed religion to be to society what the sun is to our planetary system, that without which there can be neither light nor warmth ; to be the key-stone of the moral arch, which would else have no stability nor security. Religion results from inborn principles of the human mind, which principles emanate from original sources operating proximately through the organisation of the brain.

Mr. VICAT COLE observed that religion is always changing, and is not identified with any particular race, while race remained always the same ; and that being the case, it could not be said that religion identi-

fies itself with race. All religions, he said, were, more or less, true ; and that religion was true which adapted itself to what is within a man. It was an error to imagine that one form of religion could adapt itself to all conditions of men, and what they are able to understand ; and it was therefore a bad thing for missionaries to change partially the religion of the Caffres and Bushmen.

Mr. HAMILTON said he had lived for two years in Southern Africa, and he had seen a great deal of missionary work ; and the result of his observations was that there was a strong feeling among the savages against the missionaries, who kept up a kind of aggravation among them, and prevented them from being reconciled ; when they were left alone they carried out the beautiful character of religion—hospitality, that was their religion. The Caffres were shrewd and intelligent, and possessed great natural talent, and knew a great deal better than the Missionary Society what thorough humbugs are generally sent as missionaries to Africa. They would not feed with the natives, but required a special cook to be sent for to cook their provisions, and were generally quarrelsome. He thought Bishop Colenso was the proper kind of man for the Caffres, for he accommodated his language to their modes of thought. Mr. Hamilton proceeded to mention several instances of ill-judged efforts of the missionaries, and concluded by remarking that, unless proper men are sent out, it would do no good to attempt to convert the Caffres.

Mr. PIKE replied to the remarks on his paper. He particularly noticed the objections of Dr. Blake, who asserted that long heads are Roman Catholic and short heads Protestant. He pointed out that the German Roman Catholics of the south have almost the shortest heads in Europe, and that the Italians and French have shorter heads than the English. He observed also that nothing had been said to explain the contradiction presented by the fact that the south of Scotland, where the inhabitants were most Teutonic, and Wales, where they were least Teutonic, were the two great seats of extreme Protestant dissent. As to the distinction drawn by Mr. Heath between eastern and northern nations in the passive and active character of the deity they worshipped, he thought the unsoundness of that theory has been fully exposed by Mr. Campbell. As to the observation of Mr. Bendir, that ignorance was one source of religion, Mr. Pike said he did not deny it, but knowledge also was another source of religion ; and religion of one kind or another existed with both. He did not deny, either, that religion is a function of the human mind, but he had shown in his paper how different forms of religion were propagated from one race to another, and that in the same race the forms of religion differed. With regard to Dr. Donovan's assertion that religion springs up naturally in the human mind, he had no doubt it was so ; the general diffusion of religion was sufficient proof of the fact. He denied, however, that religion is innate, and he contended that, on the contrary, children are in the habit of asking questions of a very sceptical tendency. Mr. Pike expressed surprise that during the discussion very little had been said about Ireland, and that nothing had been offered in explanation of the generally admitted fact that the Irish are bigoted

Roman Catholics, while the English are Protestants. That fact might have been adduced as an argument against his proposition, but in reality it was not so, for in early times the united British and Irish made a violent opposition to the introduction of the Roman customs and ceremonies by St. Augustine. No one had said that the Welsh, Scotch, and English, had changed their race, and yet they had all changed their religion; the Irish had been taught to believe that they were a different race from the English, and that they were an oppressed race, but he maintained that there was no more difference between Irish of the low class and English of the same class, than there is between similar classes of Englishmen in London and in Manchester. If the Irish were taught that they do not differ racially from the English it would do away with much of the ill-feeling that now exists and produce a great deal of good. He said, in conclusion, that after all the remarks that had been made on his paper, he retained the same opinions he had expressed in it.

Thanks were given to Mr. Pike for his paper, and the meeting adjourned to the 20th inst.

APRIL 20TH, 1869.

DR. CHARNOCK, V.-P., IN THE CHAIR.

The Minutes of the previous Meeting were read and confirmed.

The Members elected since the last Meeting were announced as under:—

Fellows—Arthur Johnson, Esq., Church House, Oatlands, Surrey; Captain R. Pope, Royal Artillery, Madras; Charles Hamilton, Esq., Kelvedon, Essex; James Holmes Morrison, Esq., M.D., L.R.C.P.E., Lewes, Sussex; Samuel John Cooke, Esq., 57, Camden Square, N.W.; John Alfred Lush, Esq., M.D., M.P., Salisbury.

Corresponding Member—Dr. A. Weisbach, Austrian Hospital, Constantinople.

The following presents were announced:—

FOR THE LIBRARY.

From the AUTHOR—*Reliquiæ Aquitanicæ*. Part VIII. By Lartet and Christy.

From the AUTHOR—*Man and the Mammoth*. Henry Woodward.

From the SOCIETY—*Proceedings of the Royal Society*, No. 110.

From the SOCIETY—*Proceedings of the Royal Asiatic Society of Bengal*, December, 1868, January, 1869. *Journal ditto ditto*. Part I, No. 1, 1869.

From the AUTHOR—*Discoveries in Science by the Medical Philosopher*. By Sir Duncan Gibb, Bart., M.D.

From the SOCIETY—*Bulletin de la Société Impériale des Naturalistes de Moscou*, tom. xli., 1868, No. 2.

From the AUTHOR—Examination of the Hill-forts of Sussex. By Colonel A. H. Lane Fox.

From Dr. C. C. BLAKE—Pre-Historic Times. By Sir John Lubbock, Bart.

FOR THE MUSEUM.

From Mrs. BURTON—Stones from Kitchen-Midden in Santos.

From the Rev. J. G. WOOD, M.A.—Flyflap from Society Islands, and Spear from Western Equatorial Africa.

From W. BOLLAERT, Esq.—Cranium from Chimborazo, two Specimens of Hair of Canelos Indians, Ecuador; Poisonous fruit used by the Canelos for destroying insects.

The DIRECTOR announced that a course of six lectures on the Geological Evidences of the Antiquity of Man, would be delivered by Dr. P. Martin Duncan, F.R.S., F.A.S.L., at King's College, commencing on the 9th of May. He also announced that Dr. Carter Blake was about to deliver a course of lectures on comparative anatomy and zoology at the Westminster Hospital, the last of which would relate especially to anthropology.

Dr. HOLDEN described a calvarium from Glenarm, presented to the Society by the Earl of Antrim.

On a dolichocephalic Cranium from Glenarm, County Antrim. By J. Sinclair Holden, M.D., F.A.S.L.

This cranium I obtained from a small museum belonging to the Earl of Antrim at Glenarm, who has given me permission to present it to the Anthropological Society, in hopes that it may be of some interest.

I regret much being unable to unravel its past history; all I can ascertain is, that it probably came from the vicinity of an old abbey, the foundations of which still exist, near Glenarm.

Its condition shows considerable age, being white and chalky, its consistence brittle, and absence of all organic matter. Bones rather thin.

Measurements. Dr. Carter Blake has kindly assisted me in the following measurements and description:—

	Millimetres.
Greatest length from glabella to prominent part of superoccipital bone	200
Greatest breadth (approximate)	126
Cranial index (ditto)	63
Arc from glabella to edge of lambdoid suture	259
Least frontal breadth, below temporal ridges	92
Frontal arc, nasal to coronal suture	132
Length of sagittal suture	141
Breadth between external angular processes	113

Sutures show almost complete synostosis, especially in the sagittal, a few deep denticulations visible on left side of coronal. The lambdoid partially obliterated.

The frontal bone perfect except a small portion in right temporal fossa. Superciliary ridges very projecting, with greatest prominence above the internal corner of orbits; the mesial space between orbits, though prominent, shows a hollow space, which depression extends on both sides above the projecting brow ridges. The frontal sinuses are

deep and bicamerate, with not very great lateral extension. The orbital roof is vaulted.

Parietal bones, both deficient from above protuberances rendering the transverse measurement to be only approximate. *Occipital* is wanting from just below the superior curved line.

Curve of Skull. Above the superciliaries the forehead is bombate, without markedly retrocedent slope to a point about 35 mm. in advance of coronal suture. The line from thence to a point about 55 mm. in a backward direction along the sagittal suture is nearly horizontal, giving a flat appearance to crown of head. The fall from thence to the lambdoid is gentle, and the upper half of superoccipital bone does not seem to have been more prominent than the occipital spine.

In comparison with other Celtic crania I have seen, this skull shows more prominence of the brow ridges, but much less retrocedence in the frontal region.

It differs much from the Neanderthal type, though approaching it in the projection of its superciliaries; they have not the same ponderous character; while the bombate forehead and horizontal keel-like roof, mark a wide difference.

Mr. TATE expressed the hope that the skull might be found to be connected with the flint flakes which were numerous in the neighbourhood where the skull came from.

Dr. DUNCAN made some remarks on the substance of the skull, which he said was larger than the skulls usually found in the district. He did not think it could in any manner be connected with the flint flakes.

The thanks of the meeting were given to Dr. Holden, also to the Earl of Antrim for presenting the skull to the Society's museum.

The following communication from Mr. Bollaert was then read:—

I have the pleasure to present to the Anthropological Society, the following objects sent to me by our Local Secretary for Ecuador, James S. Wilson, Esq.

1. *Cranium* from Chimborazo. Mr. Wilson tells me in his letter "I might have brought down others that were put up by the roadside. On examination they appeared to be of cross-breeds (Mestizoes). The cranium was brought from an elevation of 15,000 feet—most probably of muleteers who had died on the road from the effects of yellow fever, which severely visited the country in 1867."

2. Red hair of an Indian woman of Canelos. Canelos is far to the south-east of the city of Quito, the centre of which region is in 1 deg. 30 min. S., 77 deg. 30 min. W. The Pastaza river rises here, descending to the River Amazon. The tribe from which the hair was obtained was probably the Yumbos.*

Mr. Wilson says, "I send you the hair of an Indian woman of Canelos, to demonstrate that all Indians have not black hair.

"Having seen the question mooted by Mr. Blake in examining a skull, with hair attached, from an Indian tomb in Peru, I have forwarded two samples of hair from Canelos to show that the colour of the hair of the Indians is by no means invariably black, nor always coarse."

3. Hair of an Indian of Canelos.

4. Specimen of the poison used by the Indians of Canelos, to put on the points of their arrows.

5. A poisonous fruit used by the Indians of Canelos, to prevent the bite of flies.

Mr. Wilson also tells me that he is preparing a paper for the Anthropological Society on the Antiquities of Santa Elena, near Guayaquil; as well as one on the Indians of Canelos.

In a previous communication Mr. Wilson informs me "My journey into Canelos gave me the opportunity of examining the heads of eight Indians of rather impure breed, who carried my baggage down to that country. On my return I obtained thirteen of the Canelos Indians to accompany me up, and had intended examining their skulls, in particular, on arriving at the first white settlement, but they ran away. I have made a bargain with a trader to get me some of the small heads of the Jivaros, from the Indians of Canelos, who are their enemies."

Dr. CARTER BLAKE said that the skull was of a most interesting character. The squamosal suture had been obliterated early in life, and the triquetral severance of the upper half of the superoccipital bone was very large. The skull was certainly of great interest whether it came from Chimborazo or not.

The following paper on the character of the negro, contributed by the late Dr. John Davy, F.R.S., was then read:—

On the Character of the Negro,—Chiefly in Relation to Industrial Habits. By JOHN DAVY, M.D., F.R.S.

In using the term negro, I wish it to be understood as applicable to the African races whatever their tint of colour,—that infinitely varying from the lightest brown to almost black.

As the title of my paper indicates, it is my intention to speak chiefly of these races as regards their fitness for work and their propensities for, or against labour.

As commonly described,—they are represented as slothful,—to whom labour is absolutely distasteful. Thus an author, who has written so well recently of the people of the United States—Mr. Dicey—in his *Six Months in the Federal States*, speaking of the negroes, contrasting the whites and the blacks as to industrial tendency, says of the latter: "As a matter of fact one cannot doubt that a people, to whom work is naturally distasteful, cannot stand a chance on the same soil and under the same conditions with a race—the whites—which works for the sake of work, as well as for gain. Now supposing emancipation to take place—he wrote before its realisation—the stigma to be removed from labour, and free white labourers to pour, as they would, into the Slave States, black labour would not, I think, stand the competition, and would gradually be driven out of the field"—adding, "It seems as though, by some inscrutable law of nature, the white man and the black man cannot live and work together on equal terms on the same soil. Where the white man comes, the black man has disappeared hitherto, and I fear that America is not likely to prove an exception to the rule."

Now is it true that there is this marked distinction of races? Is it true that the nature of the white man and of the black is essentially different, and that *ab origine* the negro is doomed to remain a degraded being, but little raised above the brute?

I think it is not true. I remember in reading the last work—may it not be his last!—of the eminent African explorer Dr. Livingstone, being much impressed by the following passage:—"It is rather"—he says—"a minute thing to mention and it will only be understood by those who have children of their own, but the cries of the little ones, in their infant sorrows, are the same in tone, at different ages, here, as all over the world. We have been perpetually reminded of home and family by the wailings which were once familiar to our parental ears and hearts,—and felt thankful that to the sorrows of childhood, our children would never have superadded the heart-rending woes of the slave-trade."

As is the child, so, I believe, is the man as to all natural proclivities. What our great dramatist makes Shylock say of the Jew, comparing him with the Christian, is it not applicable to the negro compared with the white? Allow me to read the passage,—substituting *negro* for *Jew*, and *white* for *Christian*: "I am a negro: hath not a negro eyes? Hath not a negro hands, organs, dimensions, senses, affections, passions? fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer, as a white man is? If you prick us do we not bleed? If you tickle us, do we not laugh? If you poison us, do we not die?" I will proceed with the quotation no further,—from the belief that the negro is far less revengeful than the Jew is described to be.

But quitting these generalities, let us consider the two,—the white man and the black in relation to bodily structure. Is the organisation of the negro in any particular such as to render him inferior to the white man for labour, commencing with bodily labour? Certainly not; the average negro having muscles as well developed as any European. Indeed, I hardly need remind you that it was on account of the superior strength and power of endurance, that the African at the recommendation of the humane missionary Las Casas—a recommendation he lived grievously to lament—was first brought into the Spanish colonies; but too late, alas! to save the lives of the feebler natives and the extinction of a race unable to bear the toil exacted by their cruel employers.

Now, what an animal is fitted for by natural organisation, that he commonly delights in doing. According very much with their muscular structure are the native propensities of animals. We do not expect that greyhound, or stag, or race horse, so admirably adapted for speed, would be otherwise than swift: by a parity of reasoning ought we *à priori* to expect, that the negro with organs as well adapted for work as the most industrious races, should be inferior to them in capacity for work.

In the West Indies I have looked on when boys and lads have been at play; and I could not fail to admire the zest with which they en-

gaged in their sports and the cheerful alacrity and activity they displayed when so occupied. Nor have I been less struck with the persevering labour and diligence I have had occasion to witness in the instance of the negro, when occupied on a bit of land of his own, which he had bought, and was cultivating on his own account.

To show that I am not peculiar in the opinion I have formed of the capacity of the negro, I shall take the liberty of reading two or three extracts from the works of men, whose authority cannot be questioned. I will first quote Dr. Livingstone; and again from his last work: speaking of the Manganja people, far in the interior, and exempt from the curse of slavery, he remarks, "They are an industrious race; and, in addition to working in iron, cotton, and basket-making, they cultivate the soil extensively. All the people of a village turn out to labour in the fields. It is not an uncommon thing to see men, women, and children hard at work, with the baby lying close by, beneath a shady bush. When a new piece of woodland is to be cleared, they proceed exactly as farmers do in America. The trees are cut down with their little axes of soft iron; trunks and branches are piled up and burnt, and the ashes spread on the soil. The cane is planted amongst the standing stumps, which are left to rot. If grass land is to be brought under culture, as much tall grass as the labourer can conveniently lay hold of, is collected together and tied into a knot. He then strikes his hoe round the tufts to sever the roots, and leaving all standing, proceeds until the whole ground assumes the appearance of a field covered with little shocks of corn in harvest. A short time before the rains begin, these grass shocks are collected in small heaps, covered with earth and burnt,—the ashes and burnt soil being used to fertilise the ground." He further states—"Iron ore is dug out of the hills, and its manufacture is the staple trade of the southern highlands. Each village has its smelting house, its charcoal burners and blacksmiths. They make good axes, spears, needles, arrow heads, bracelets, and anklets."*

The next author I shall quote, is another distinguished African traveller, Sir Samuel Baker, who, at the meeting of the British Association at Nottingham, in his observations on the African character, contrasted tribes in two different localities: one unfavourable to progress of any kind; the other more auspiciously situated. The first, who inhabited this vast region of morasses extending on either side of the White Nile between 10 deg. and 15 deg. N. lat. "Naked savages, of emaciated forms, the lowest type of negroes, physically and morally." "There," he remarks, "no iron is found, and therefore no iron manufactured. This, the manufacture of iron, one of the causes of the superior condition of the tribes more favourably situated, such as those who inhabit the higher land between 4 deg. N. and the equator—a cooler, drier, healthier climate, and where the art of making iron is every where practised, and instruments of great beauty are made. The Unyora people, he remarked, have invented a kind of hoe that might be copied to advantage by Europeans." Now, surely the smelter's art and the blacksmith's art are not arts suitable to the indolent. The

* *Expedition to the Zambesi and its Tributaries.*

same traveller found the natives of Ungoroo within two degrees of the line "decently clad," who "considered the indecency of nakedness in the same light as among Europeans." These are his words, and I might quote other passages to the same effect from his book. Thus, in one place, he says "It was a delightful change to find ourselves in comparative civilisation: this was evinced not only by decency of clothing, but also in the manufactures of the country," and he specially mentions "a fine quality of jet-black earthenware."

The next authority I shall refer to, was a man who may be said to have sacrificed his life in the cause of humanity—good Bishop Mackenzie. He, on arrival in the Manganja country, then in company with Dr. Livingstone,—seeing how that hilly region was cultivated, remarked to his companion: "When telling the people of England what were my objects in going out to Africa, I stated that, among other things, I meant to teach these people agriculture,—but now I see that they know more about it than I do." And, this you perceive, accords with the quotation before given from Dr. Livingstone, showing the manner in which land was cleared and brought into cultivation.

Anonymous authorities may commonly be objected to, but when I mention the well known signature of *Jacob Omnium*, I trust I may bring forward his evidence with the certainty that it will be received as trustworthy. The words that I shall quote are from a letter of his that appeared in the *Evening Mail* of the 21st of September, 1866, in reply to some remarks on the negro of the most disparaging kind. He observes: "I see no proof that the negro requires a greater stimulus to work than the white man:" adding, "Some of the first sailors I have seen have been pure negroes, and the Kroomen of the coast of Africa, are well known to all who have frequented the coast, for their intelligence, fidelity, and energy as gangsmen, both by sea and land." And, he further remarks, in proof of the inaccuracy of the opinion of the mental powers of the negro becoming stagnant at an early age—about that of puberty, "That he had in his employ between twenty and thirty years a black engineer, born and bred on his estate who had during that time entire charge of a powerful steam-engine and sugar mills; and a black boat captain, also born and bred on his estate, who during that time had entire charge of a schooner of sixty tons manned by negroes, and constantly plying backwards and forwards between the capital of the colony—George Town, British Guiana—and the coast, on a stormy and open sea-board, without any harbour of refuge in bad weather, and on no one occasion had I reason to suppose I could have been better served by white men." This opinion of Jacob Omnium that "The negro requires no greater stimulus to work than the white man," is confirmed by Dr. Livingstone most fully, where he says: "When it is for *their interest*, blacks work very hard."

Allow me to submit to you one more quotation. It is from a very interesting narrative of a tour through the island of Jamaica, with remarks on the social and industrial condition of the people,—the emancipated negroes, by Thomas Harvey and William Browin. The passage I select, is descriptive of what they witnessed on a well ordered estate. "We next drove to the Arcadia estate, the residence

of a gentleman who as proprietor of several estates and attorney for others, exercises an influence which is beneficially felt throughout the parish. On these estates work proceeds with the same regularity as in a well ordered English establishment. The secret consists in the punctual and weekly payment of wages, the firm but kindly handling of the people, and the discouragement of all harsh language and improper conduct on the part of the overseers or book-keepers. During our call the weekly returns of work on two of the estates were brought in, from which we were allowed to copy the following items of wages actually earned in one week :—head boiler man 15s. 4d. ; boiler-men and stokers, each 11s. 8d. ; still-man, 9s. 9d. ; engine-driver, 15s. ; cane-carriers, 11s. 6d. ; carpenters, 2s. 3d. and 2s. per day ; mason, 2s. per day. The earnings of the rank and file were of course on a smaller scale.”

“*Manchester*,” they further remark, “is probably at present the most advanced and prosperous parish in the island. Coffee is its great staple. The value of this crop, for the whole island, we heard computed at £300,000, of which two-thirds is grown by the smaller settlers. Some of the people are fairly rising into a middle class. We found one black freeholder, once a slave, living in a house, which with its out-buildings, coffee-floor, &c., must have cost several hundred pounds, and what was better still, was comfortably and even elegantly furnished with books on the table, and framed prints on the walls.”

I trust I need hardly observe that I should not have brought forward the evidence afforded in these quotations, were I not, from what I knew myself of the people to whom they relate, satisfied of their accuracy. During three years spent in the West Indies, and I visited all our colonies with the exception of Jamaica, I had tolerable opportunities of becoming acquainted with the coloured races ; and from my own knowledge, I might state particulars all in accordance with the statements already submitted to you, to show that the negro as regards industry, does not deserve the stigma of inferiority to the white man, so far as his aptitude for labour and his inclination to labour are concerned. My belief is that under similar circumstances, with like motives to industry, or the absence of such motives, little difference would be appreciable as regards labour in the two races.

It seems to me somewhat idle to say that the white man has an innate love of labour, or, as Mr. Dicey expresses it, “works for the sake of work.” Activity, a certain vital energy, whether of muscle or of brain, may be said to be innate,—but as germs for development and growth, according to the circumstances, in some measure, which may be favourable, or the contrary, to their direction and perfection.

In Barbadoes an opportunity offers of comparing the two races, placed not precisely in the same circumstances, but as nearly so, probably, as possible, at the present time ; viz., the emancipated negroes and their descendants, and the poor whites, the descendants of the original colonists. Whilst the former were made to work during slavery, ... the latter were free to work or not, according to inclination, and the men, these very whites, constituting the island militia, and having an

allowance of pay and a portion of land accordingly, and often a slave or two, considered field labour beneath them, and grew up in habits of idleness, spending much of their time in cock fighting, drinking and other amusements. The habits thus acquired have adhered to them. Under less favourable conditions since emancipation and the loss of their militia allowances, they have fallen lower and lower, and are in every way a degraded race; mostly weakly and unhealthy, and often depending more on the industry of their wives than their own—these Whites also—but who resisted the temptations to which the men were exposed, and never lost their habits of domestic thrift and industry, which they inherited from their English parentage. The negroes, the reverse of these poor Whites, on emancipation, with their acquired habit of labour, when free, found labour easy and comparatively pleasant, having no longer the terror of the whip urging them to over exertion, but the stimulus of wages, with the comforts and enjoyments which such wages would procure them.

During slavery, in its worst time, the black population was constantly on the decrease, owing to the undue mortality occasioned by hard labour and ill-treatment. No sooner was the slave trade abolished, and it became the interest of the planter to mitigate the condition of their labourers, than the tide began to turn, and the births exceeded the deaths; and so continuing after emancipation, there is now such an increase, as to meet all the wants of the estates and the demands of the planter,—with an excess permitting of emigration. And what is remarkable, the produce of Barbadoes has increased in somewhat the same ratio, and is greatly more than during the period of slavery. And it is remarkable too, that even amongst the planters a general contentment prevails, they finding themselves in a far happier state, working their properties with willing labour, instead of with forced labour. I have heard a proprietor say that during the olden time he never put his head on his pillow without dread of something that might occur during the night—such as a corn field on fire, or rising of slaves. Then every island had its place of refuge; and a white militia was constantly ready to act. Further details on this subject might tire your patience; but knowing how strong is the persuasion that the negro is an idle being, I will ask your indulgence, whilst relating the experience of one of the planters of Barbadoes at a critical time, arising out of a panic in the money market. He had been peculiarly successful, and this mainly owing to the system he followed with his labourers, paying them daily, and with strict justice, when on task-work, according to the amount of work done; thus, with a kind manner towards them, gaining their confidence and regard. During this crisis, he continued their daily payments as long as possible; at length when his means were exhausted, he called the labourers together and acquainted them fully of his inability to pay them for the present, any longer. To a man they volunteered to keep two of his estates, those on which they had been employed, in order, waiting for a better time for remuneration. The same gentleman had recently purchased a third estate,—the labourers on which were in a manner strangers to him. These men all struck work. The others hearing of this, a

second time came forward and offered to keep this property also under culture on the same condition as the two before mentioned—an offer that was gratefully accepted. What should we say of farm labourers in our own country, or in any other European country, who so tried, would have acted in the same manner? Would they not deserve the highest eulogy? And, these negroes, many of whom may have been slaves and have felt the lash of the driver, do they not merit highest praise.

I should be wandering from my theme were I to digress on the great subject of the unity of the human race: yet I am tempted to say a few words about it, for which I must again ask your indulgence.

As regards differences of bodily structure, I believe I may confidently say, that comparing the two races, the whites and the negroes, they are trivial, and not more remarkable than the variations observable in the several coloured races, whether Chinese or Malays, Hindoos or Australians; and less remarkable than those which are witnessed in any species of our domestic animals. Dr. Livingstone remarked that he had “never seen a perfectly black African,” the colour being different shades of bronze,—and in the highlands especially, where not much exposed to the sun’s rays, light chestnut; nor, as he states, does he hold to any one form of other presumed peculiarities, whether “of nose, or lip, or calf or heel.” And it is well to keep in mind that of the peculiarities assigned to the negro, some of the most marked, as the colour of the skin, the crisp and close set black hair, and head and black eyes, may better fit them for their native tropical climate; a climate as fatal to the white races, as that of our northern regions is to the African,—justifying I believe, the proposition that the white man and the black cannot live together on the same terms, *i.e.*, substituting *climate* for *soil*; and of this we have already tolerable proof in our West Indian colonies, where, since the abolition of slavery, the negro population has been rapidly increasing and prospering and the white population has been decreasing,—and not merely since emancipation, but before. Picture to yourselves a white man labouring, as I have seen him at labour, with a hoe in hand, an umbrella over his head, and a white face cloth over his face, and you will comprehend how unfit he is for field labour under a tropical sun, and the folly, and indeed cruelty, of importing, as has been too often done, English labourers into our West Indian colonies. The proportionally great mortality of white troops in all tropical climates, proves to demonstration, its unfitness for white races. Next, as regards mental qualities,—the same remarks seem hardly less applicable. Even amongst our own people, what an infinite variety of intelligence is observable; and as regards classes, surely very much in proportion to educational means employed in aid of the development of the intellect. I once asked a very intelligent physician and planter of Antigua, who had taken his degree in Edinburgh, what he thought of the intellectual capacity of the negro? His reply was that he considered it quite equal to that of the European. One of the most interesting sights that came under my notice whilst I was in the West Indies was a school for negro children of various ages, under the superintendence of the

learned Principal of Codrington College. I happened to be present during an examination, and I was truly surprised at the mental activity and intelligence and acquired knowledge which these young scholars displayed; and the same gentleman has expressed his opinion, both as regards the activity of the young mind of the negro, and its capability of further advancements with continued education,—an opinion of more value as founded on his knowledge of the progress made by coloured students in training at the college for holy orders. Professor Tiedeman, I need hardly remind you, has given many instances of negroes who had made a certain progress in the liberal arts and sciences and distinguished themselves as clergymen, philosophers, mathematicians, philologists, historians, advocates, medical men, poets, and musicians, and that many also had earned reputation by their talents in military tactics and politics. After careful inquiry, the results of which he gave to the Royal Society in a paper “On the brain of the Negro, compared with that of the European and the Ourang-outang,” his final conclusion was, that there is no innate difference in the intellectual faculties of these two varieties of the human race,—he maintaining that the apparent inferiority of the negro is altogether the result of the demoralising influence of slavery. And, now reflecting on the innumerable and terrible evils which slavery has produced,—evils which, Nemesis like, have not spared their masters, blinding their moral sense and degrading their character, may we not well congratulate the present generation on the prospects, now at last opening, of total abolition of slavery in America and its islands; and that, with an arrested demand for African slaves for exportation, may not a ground of hope be entertained that the dreadful curse may ultimately be removed from the entire of Africa, and that once abolished the African races may then have, what hitherto they have only partially possessed, a fair field for exertion; and the fact that those tribes which have been the least oppressed by slavery, and have had the advantage of a good climate and of a soil not ungrateful, as in the highlands of Central Africa,—have made fair progress, comparable perhaps to that of the ancient Gauls and Britons, may it not at least warrant the hope, that they too, like them, may under favouring circumstances, run the like course and attain the same height of civilisation: or, a mode of civilisation of their own, distinguished for greater geniality,—a stronger display of the natural affections, and an absence of that stern severity, that iron resolution which have left their stamp on the character of most European nations in times of utmost trial—of whom the Spaniards and French are the most striking examples in their wars of religion, and our countrymen, including the *perfervidi Scoti* in all our wars, especially the most recent. This hypothesis of a milder type of civilisation, which the negroes may inaugurate, was brought forward by a well known writer in the *Edinburgh Review* when criticising the *Introductory Lectures on Modern History* by the late Dr. Arnold, and his opinion “That modern history appears to be not only a step in advance of ancient history, but the last step,—as if there would be no future history beyond it,”—the fulness of time having been reached. The opinion—this opinion of the critic—that this stability of history is

not proved,—that a new era may open, viewed merely as a possibility, may be deserving of thought. It is not one that I can advocate—believing, as I do, that the several races of mankind are not essentially different. However, there are traits in the history of the coloured races which might be brought forward in support of the speculation. In giving the quotations from Shakespeare, I broke off without finishing the speech of Shylock, assigning as a reason, my belief that the negro is less revengeful than the Jew is represented. Now it is very remarkable how little of the revengeful passion the black races have shown under oppression. Even during the worst times of slavery the murder of a white man in our colonies was a rare occurrence; and, on the great event of emancipation, the freed negroes seemed to have had but one strong feeling, that of gratitude associated with the religious sentiments of adoration to the Supreme Being, for this great boon conferred on them. The day was marked by crowded congregations at places of worship; and so it is kept, in commemoration, annually, to the present time. Whatever the future history of the human race may be,—surely it becomes us to keep in mind, that those varieties of it—those nations which are now distinguished for their advances in the sciences and the arts, were once rude and what are commonly called barbarous, and that, to adopt the words of Dr. Arnold in the Lectures referred to, “Even the ancestors of the Athenians were to be no otherwise distinguished from their barbarian neighbours than by some finer taste in the decorations of their arms, and something of a loftier spirit in the songs which told of the exploits of their warriors.” Keeping this well in mind let us not treat with contempt,—often ending in cruelty,—existing races, still, as it were, in their infantile state,—but view them with kindness, giving them credit for capabilities for improvement, needing only culture and sustained education to bring them forward and into the pale of civilisation. Of all existing races, the natives of Tasmania and Australia are commonly considered of lowest type. The former have been supposed ignorant even of the method of kindling fire—they are a solitary example—and under the necessity of preserving it with all the care and after the manner of the vestal virgins. This is not the case, as I have been assured by a gentleman—Mr. Robinson, their appointed official protector,—who, after careful study, formed a high opinion of their capacity, teachability, and of a certain innate goodness of character.

Mr. DENDY said he felt in a delicate position with regard to the paper; for it was a maxim *de mortuis nil nisi bonum*, nevertheless there were many of the author's remarks to which he must decidedly object. In the first place, they expressed the erroneous ideas that were broached twenty years ago. It was asserted that the Jew and the Negro might be assimilated, and a speech of Shylock's was quoted, and the sentiment expressed was applied to the Negroes. He (Mr. Dendy) could not accept it as a truth that the Jews and Negroes were so approximate; because the Jews were of the Caucasian race, and the Negroes were not; neither could he, nor any anthropologist, admit their similarity when looking at their respective organizations. Nor in the assumed similarity of their characters was there any real

resemblance ; for the general character of the Jews was not to be taken as justly represented in the character of Shylock.—there were Shevas as well as Shylocks. Looking at the question anatomically, it would be found that a great difference existed between the Caucasian and the Æthiop. The muscular system of the latter was not so highly developed ; and Mr. Dendy referred, in confirmation of that opinion, to the recent cricket matches, at Kennington Oval, between Englishmen and Australians. The latter batted well, but they lost every game because they could not run. The Negro, in fact, could not run ; he lifted his legs high as an Andalusian horse does in his *amble*, and went at a slow pace. Then the working propensities of the Negro could not be affirmed at the present day. In the Southern States of North America they could not get the free Negro to work regularly, pay him whatever they would. The Negro was drunken and idle, when not compelled to work by necessity. Next, as to mental capacity, the Negro, with few exceptions, could not be educated beyond a certain point. After boyhood, their mental development seemed to be arrested. It was the same with apes : when young, they exhibited a gleam of intelligence, bearing some comparison to that of children, but when they approach the adult period, they were very different from human. As to the assertion that the anatomical differences between the Negro and the European were trivial, it was only requisite to compare the skulls on the table to demonstrate their comparative development. The paper seemed to have been written rather in a party spirit, favouring the question of direct Negro emancipation, and was very much in the style of *Uncle Tom's Cabin*. He felt assured that his opinions respecting the Negro would be borne out by most Americans, and he thought the paper was calculated to mislead ignorant persons, and to produce false impressions. The treatment of the Negro should be that of a wayward child,—kindly, yet very firmly.

Mr. RALPH TATE, speaking from his experience of the Negroes within the last two years, said he considered them to entertain an exaggerated opinion of their own importance ; that they were saucy and idle, and would not work when they had obtained enough to supply their present wants. He had seen some of them turn out tolerably good work ; but they had no taste, and required direction. The inferiority of their muscular system, compared with Europeans, was to be seen in their legs. He never saw a Negro run. The influence of climate on the Negroes, he thought, was much the same as on white men, and they were more susceptible to diseases. In the mining districts of Guiana they were almost always ill ; but that might in part be attributed to their imprudent mode of living. They made good miners, while the natives of the country were useless for the purpose ; they also undergo fatigue better than any other men who could be introduced from other countries. They worked from seven o'clock in the morning until four in the afternoon, with a cessation of an hour at midday, and they worked indefatigably during the time. They earned as much as from 10s. to £1, and, in some cases, £3 a-day ; they spent their money very freely, and were thus led into danger. By judicious management, they would

do the work set them. With regard to their intellectual capacity, he thought the Negroes were capable of attaining a limited amount of education.

Dr. HUNT expressed his regret at being obliged to speak against the character of the paper, which he was surprised should have been offered to a scientific society by a man so eminent as Dr. Davy, the brother of Sir Humphry Davy, although any communication from him was entitled to attention. He had, indeed, put the case in favour of the Negro in a forcible manner; but he had not advanced anything new. In the discussions on the subject some years ago, distinctions were made between the different Negroes in Africa; but the author of the paper did not recognise any distinction between them, and considered the Negroes in all parts of Africa as the same. He attempted also to controvert the opinion that, in the colonies, the white man and the black cannot work on equal terms; that was, however, a matter that depended on climate, and in some respects therefore, in a hot climate, they would work better than Europeans. Again, the author drew the inference of equality from the fact that the cries of children were the same in all parts of the world. He might have said the same of the cries of the young of most mammalia. Dr. Hunt then proceeded to comment on the authorities quoted in the paper, noticing the reference to Jacob Omnium, and to the evidence of two gentlemen sent out to Jamaica by the Society of Friends. With respect to the latter, he remarked, that the members of the Society of Friends generally saw what no other European could see in the Negroes,—that they were all peace, quietness, amiability, and goodness,—and could not see what was in their characters as seen by other people. With regard to their capacity for labour, it had been shown in a paper, written by Dr. J. C. Nott, that the Negroes had great repugnance to agricultural labour; that in America they were becoming worse and worse every year, and were dying out by disease. As an anthropologist, he admitted he was delighted to find the Negro in the present state in America; for it afforded an opportunity of seeing the Negro problem worked out in that country. He was frequently receiving letters to the effect that the views of some of the Fellows of the Anthropological Society were being verified, and that the attempts to educate the Negro were forcing him to his ruin. Dr. Davy spoke of his experience, which was thirty years old. He agreed with Mr. Dendy, that the Negro could be educated to a certain point, but only so far, and beyond that point his progress would stop. But the question then arose as to the amount of good to be done by it. A gentleman who had been in America, who previously conceived the Negro to be capable of a certain amount of intellectual advancement, now stated that he had changed his opinion, as most persons who have been in America did. All the facts he had read in the papers, the statements of scientific men, and the correspondence he had received, agreed in representing the present state of the Negroes in America to be worse than ever. In certain climates, no doubt, the Negroes were very useful, and he hoped they would become useful to the rest of humanity; but in their present state they

were fast dying out in America, owing to the attempt to force them into an unnatural position. Experience had shown that the worst fears respecting the Negro had been verified, and he could only say he wished that such had not been the case.

Mr. CONWAY said it was of the utmost importance that the subject should be treated without prejudice, and he regretted that anything had been introduced in the paper to give rise to a feeling of that kind. The question of emancipation was not involved in the character of the Negro, for nearly all the Negroes in America were mixed with European blood, it being very rare to see there a Negro of pure blood. He had been born and brought up among those people. His father was a slave-owner, and he had taken great pains to observe the characters of the slaves among those who were most unmixed in blood. So far as his experience extended, he must say that the Negroes had the advantage of the Whites in point of activity; for the southern poor white was about the laziest man in existence. With respect to the opinion of Mr. Higgins,—better known as Jacob Omnium,—quoted by the author of the paper, he attached more importance to it than Dr. Hunt seemed to do; for Mr. Higgins was a man of perfect truth, and had himself employed Negroes extensively in the West Indies. If he had not profited by their industry, he would not have said so. As to the assertion of their repugnance to agricultural labour, he called attention to the fact, in contradiction to that assertion, that lately in all the elections in the Southern States, the Negroes were threatened by their masters that they would not give them work if they voted for the republican candidates; the threat of withholding work from them showing that, in their masters' estimation, the Negroes were anxious to work. It was a matter of fact that, since Savings' Banks had been established in the Southern States, the Negroes had deposited in them four or five millions of dollars. That fact showed that the liberated population were working industriously. As to their being worse off than they were before emancipation, he believed that, to a great extent, they were so; for there was a hope entertained by the southern planters that there would be a return to slavery; and hating as they did, from principle and connexion, the present state of things, they had reason to make him uncomfortable, and, he was consequently maltreated and was badly off. But when there was seen to be no possibility of a return to slavery, their condition would be altered. It was the fault of the planters that the Negro was not better off, and it could not fairly be attributed to the character of the Negro. This complaint against the Negro that he was worse off than before, reminded him of the Frenchman who, when convicted of the murder of both his parents, appealed to the court for mercy, because he was an orphan. The Southerners looked on emancipation as a great wrong; and the present state of things in America was artificial, and had no bearing on the character of the Negro, or to the position he would normally occupy. As to his capability for education, Mr. Conway did not consider the difference between the European and the Negro furnished a warrant for saying that his intellect is inferior to that of other un-

developed races. In his physical characteristics there seemed, no doubt, to be something peculiar ; but similar differences were observed in different other races.

Mr. BURNS thought that in reviewing the position of the negro his circumstances ought to be taken into consideration—organic, parental, educational and social, as these were the conditions which regulated all men. The tendency of his organisation was towards the nutritive, sensuous, and emotional. His parentage bequeathed to him no hereditary mental qualities of a high order. Their minds, as a race, were devoid of educational influences, and their social position was that of the slave or savage. Where circumstances had enabled a favourable change to take place in the conditions of the negro, he had displayed highly commendable qualities in various phases of active life. The speaker pointed out that the same have obtained amongst our own countrymen. A vast improvement could be noticed in three generations of culture, and there was a great difference observable between the Dorsetshire labourer and the Lothian ploughman ; the denizen of the east end, the city, or the west end of London. The people of Great Britain had a very different conformation of cranium from what they had a few centuries ago, as was indisputably evidenced by the skulls dug up in old abbeys, &c. Culture and improved conditions had effected this desirable change, raising the British from a state of barbarism to the highest point of present civilisation, and he thought similar treatment would have a like effect upon the negro.

Dr. HOLDEN made some observations respecting the alleged equality between negro and European children. He said he had for nearly two years assisted some young ladies in the management of a negro Sunday school near New York, and had no doubt of the children being very different from those in any White school. They were everlastingly restless and fidgety ; attention could only be caught by appeals to the eye or ear, as with pictures or singing, and then but for a moment. The total absence of the slightest effort at reflection and the constant animal restlessness, marked a wide difference between black and white children.

Dr. NICHOLAS said he had listened to the paper with great interest, and he thought the testimony brought forward in favour of the negro was very satisfactory. Being himself free from prejudice on the subject, and belonging to no "school," he had listened with respect to the sentiments of those who had lived among the negroes ; and he thought that some of the accusations that night brought forward against them were of little value. It had been said, for instance, that the negro would only work when it was to his advantage to do so. Now, we were all, he thought, about the same in that respect, and we should not blame the black man for possessing one of the chief traits of Englishmen. The fact that the negro was much employed in labour was itself proof of his strong muscular power. He regarded the negro, with all his defects, as a hopeful part of humanity, fitted, as proved by experience, to undergo culture. It had required centuries of culture to convert the savage Saxons into the Englishmen of the present day, and even now there remained much to accomplish. On com-

paring the Dorsetshire and Wiltshire labourers, and many of the dwellers in the eastern part of London with the negro, he doubted whether there was much advantage on the side of the former.

Mr. HAMILTON observed that when anyone attempts to teach negroes anything he cannot fail to observe the great restlessness of their characters. The work to be done must be placed before them, and it must be made clear to them that they must do it. There was, indeed, a place for the negro, which was in his own country; and he should not be interfered with. Speaking of the negroes in southern Africa, he said that they cultivate the soil when it is their own, but even then the men won't do it, but leave it to the women. The men marry early and have a wedding once a year, getting their wives to do the farming work. They are perfectly happy in that state, and our missionaries have no business to interfere with them. The coolies who had been introduced into the country were much inferior to the Zoolu Africans, for savage people were always best in their own country.

The meeting was then adjourned to the 4th of May.

MAY 4TH, 1869.

DR. BEIGEL, VICE-PRESIDENT, IN THE CHAIR.

THE minutes of the previous meeting were read and confirmed.

The presents received since the last meeting were announced as follows:—

FOR THE LIBRARY.

From the INSTITUTE.—Journal of the Royal United Service Institute, No. lii, 1868.

From the SOCIETY.—Transactions of the Geological Society of Glasgow, Vol. iii, Part i.

From the SOCIETY.—Proceedings of the Royal Geographical Society, Vol. xiii, No. ii.

From A. L. LEWIS, Esq.—One Chinese Anatomical Diagram.

From the SOCIETY.—Royal Society of Tasmania, formerly Royal Society of Van Diemen's Land: its Reports from 1848-66; Catalogues of Plants, 1857, 1865; Monthly Notices, 1863-1867; Abbott's Meteorological Observations.

The CHAIRMAN said he was sorry to have to announce that the Society were about to lose one of their most valued officers, for the Director, Mr. Brabrook, had tendered his resignation, a government office having been offered to him which he had accepted. The Chairman bore his testimony to the valuable work Mr. Brabrook had done for the Society; and he said he did not know how the want could be supplied which his resignation would occasion. It was only the presence of Mr. Brabrook which prevented him (the Chairman) from stating more fully the valuable services he had rendered to the Society.

He had been always ready and among the foremost to undertake anything that was to be done to promote their interests. The least they could do was to render him their ardent thanks for the kindness, the ability, and the zeal he had shown in his work ; he had made it a work of love, being convinced that the objects of the Society, and the principles on which it was founded, would ultimately gain the victory. The Chairman, in conclusion, called on the meeting to render their most sincere thanks to Mr. Brabrook on his resignation.

Mr. DENDY expressed the thanks of the Society to the Director for the valuable services he had rendered in its management. There was, in addition to his other qualifications, one quality which, above all others, made him valuable in council and discussion, which was his clear and exact mode of reading, so that everything he read was perfectly understood ; and he (Mr. Dendy) had often listened with admiration to his reading. Having been specially associated with Mr. Brabrook, occasionally, he had the opportunity of observing and admiring his great tact and management. In conclusion, Mr. Dendy expressed his best wishes that, under whatever circumstances Mr. Brabrook might be placed, they would tend to his happiness and welfare.

The motion having been passed with unanimous expressions of approval,

Mr. BRABROOK said, it was impossible to conceal the emotion he felt at the flattering remarks of the gentleman who had proposed the vote of thanks, and the cordial reception of it by the meeting. Such services as he had rendered the Society had been outweighed by the honour of holding the office he had filled, as successor to the founder of the Society, Dr. Hunt. He trusted that in transferring it to whoever might be appointed in his place its honour and dignity were undiminished. The success of the Society itself was assured, and depended in a very slight degree upon whoever might happen to be its executive officer. His earnest desire had been to discharge his duties with sympathy and good feeling, and he retired from office with no sentiment but one of gratitude to all with whom he had been concerned.

The CHAIRMAN called attention to a number of photographs, which were exhibited by Mr. Pedroletti, of natives of Africa, China, India, and other people taken in the Sailors' Home. He then read a letter from Professor Broca of Paris, on the promotion of an Anthropological laboratory, which he said afforded the opportunity of acquiring valuable instruction ; and he expressed a hope that the Anthropological Society of London would even have such a laboratory.

The thanks of the meeting were given to Professor Broca for his communication.

Dr. CHARNOCK then read a paper, of which the following is a short abstract, on "The Peoples of Transylvania":—

The races embrace Hungarians, Szeklers, Flemish, Saxons, Germans, Wallachs, Armenians, Bulgarians, Servians, Russians, Italians, Greeks, Jews, and Czigány or Gypsies. The Saxons have still the manners of the fatherland. There are few marriages of affection. Divorce may be had on the smallest pretence. The language is Low

German. The Ugri or Hungarians have been confounded with the Turkish tribe, called Uighurs. Ugorien probably means "high land," from Ostiak, *ugor*, "high." The Magyars are of the Asiatic type; the eye is large and flashing, eyebrows large and bushy, moustache thick, teeth large and white, complexion often tanned with the sun. They are strong and well-proportioned. Some of the finest men are found among the lower orders. They are more polished than the Szeklers, are patriotic, hospitable, benevolent, possess much national pride, and take little interest in industrial pursuits, but are great politicians. The women age quickly. The Szeklers occupied the province as early as the eleventh century. Their identity with the Huns is doubtful. The name is from Magyar, *széék*, "seat," *hely*, "place". They are of medium stature, and more closely knit than the Magyar. The cranium is flat, face mostly oval, nose small and curved, mouth small, lips slightly raised, chin rounded, eyes fine and flashing, complexion somewhat tawny, hair usually black, but in the highlands sometimes fair. They are energetic, and enduring, and make good soldiers. They are of a sanguine temper, independent, sober, thrifty, hospitable, unostentatious, and more enthusiastic than the Magyar. They are neat and cleanly in their persons and home. Beggary is a rarity. The lower orders are somewhat sensual, obstinate, and ambitious. The people speak Hungarian, but have a broader accent than the Magyars. They seldom speak German; but are generally acquainted with the Wallachian. They are either Calvinists or Unitarians. More than half the peoples of Transylvania are Wallachs. They are most numerous in the central and western districts. The race is brachycephalic, and approaches the Vendic type. The cranium is greater than that of any of the Austrian races, except the Slavonians, Magyars, and Czigány. Most of the Wallachs are dark; but some are fair. They are great horse and cattle dealers, and are engaged in agriculture, and as drivers of the public conveyances. Their dwellings often swarm with vermin. They are superstitious, idle, and improvident, have little regard for law or authority, are great thieves and cowards, have a mania for incendiarism, and are prolific; they all wear woollen trousers and sandals. About Naszod they are of the better sort, well dressed, and the women are pretty. They are of the Greek or united Greek Church. The base of their language is Latin; it contains many words from Greek, Slavonic, Turkish, and German; it is now the fashion to disuse words not derived from Latin, and to introduce others from French, Italian, and Spanish, which the peasants do not understand. Some Wallachs speak German. There are three Armenian towns. Great part of the trade is in the hands of Armenians and Greeks. The Armenians first came from Moldavia into Transylvania in 1672; others arrived at a later period. They are of middle size, some are rather stout; the eyes, hair, etc., are dark; the ladies are handsome, and make good housewives. The Armenians are a quiet, civil, hospitable people, scarcely troubling themselves about anything but trade. Though sharp in business, they are honest, and are much liked by the Magyars, with whom they often intermarry, but

not with the Saxons. They speak both Magyar and German. At Számos Ujvar, where they have a church, they converse in Armenian. Their dress, manners, habits are the same as those of the Hungarians; they were originally of the Greek church, but are now nearly all Roman Catholics. According to some, the Jews arrived in Transylvania towards the end of the first century; there was a later influx at the taking of Constantinople. They dwell in and near market towns, and in villages among the Wallachs, are of the Rabbinite sect, and now enjoy full political rights and religious liberty. In external appearance the race peculiarity is unchanged; there have been no intermarriages. They acquire the Magyar, and when speaking it, it is scarcely possible to detect any difference between their pronunciation and that of the Magyars; it is otherwise when speaking German. The Czigány entered Transylvania in 1420, and probably had their name from the Persian *zangi*, an Egyptian, Ethiopian, Moor, Negro. They are very dark and of middle stature, but there are many fine men; they are capable of enduring any amount of cold or heat, and live to an advanced age. The most common diseases are measles, smallpox, and weakness of the eyes, occasioned by the smoke of their dwellings. They are fond of carrion, and are very dirty. They are found in all the markets. Some are carpenters, turners, pan-makers, or horse-dealers; others wash gold from the rivers. Their most usual occupation is working in iron; they are skilful farriers and blacksmiths, and better field labourers than the Wallachs. In no part of Europe is the gypsy language better preserved; here it maintains its grammatical peculiarities; this is accounted for by the fact that here they have not been persecuted, but have been allowed to herd together. It has many words from the Turkish, Wallachian, Magyar, Slavonic, German, Latin, and Greek; its vocabulary differs much from other gypsy dialects. Many gypsies also speak the Wallachian, and they are generally acquainted with the language, and conform to the religion of the district; their real religion is a mixture of fatalism and fetishism. In government returns they are set down as Christians. The located gypsies are generally honest, and the females virtuous. Some are skilled in music: they place a violin in their children's hands at an early age, and keep them in constant practice; they do not play from notes, nor perform many tunes, but execute with great perfection, and are generally led by a Hungarian. The musicians are looked upon as the gypsy nobility. The gypsies sometimes intermarry with the Wallachs. They have a sort of regular government, rather nominal than real; their chiefs are distinguished by the Slavonian title, Voyvode. Measurements and description of a Rumáni skull in the collection of the Anthropological Society, by Dr. Carter Blake, were appended.

Thanks were given to Dr. Charnock for his paper.

The following remarks on Dr. Charnock's paper, communicated by the President of the Society, Dr. BEDDOE, were then read.

"I regret very much that I have not the opportunity of hearing Dr. Charnock's paper. Probably the few remarks I have to make upon its subject may have been anticipated therein; nevertheless I submit

them, on the chance that they may aid in promoting discussion. They concern the Transylvanian Saxons almost exclusively.

"Firstly, I wish to call the attention of the Society, supposing Dr. Charnock not to have done so, to the remarkable fact that the Saxon population is, or was till lately, rapidly decreasing in number. This is not to be accounted for by any of the causes that would most readily suggest themselves in a similar case. The country is fertile, and has a fairly good climate: it has not, for a century, suffered very severely from the ravages of war; no extensive emigration, that I am aware of, has taken place. One author speaks of 'family pride' as the cause of the decrease, but does not further explain his meaning. There must be something in the habits and customs of the people either adverse to marriage and propagation, or prejudicial to infant life; whatever it be, the resulting phenomena are greatly to be regretted, the Saxons being, as reported, a fine race, physically and morally, thriving, industrious, and well-conducted, and much superior to the Roumans or Wallachs, who are multiplying so rapidly that they threaten at no distant period to swamp the Magyars, Szeklers, and Saxons.* I might add a good deal respecting the tendency to dwindle in numbers of certain highly endowed castes, breeds, or types of mankind; and the subject would be interesting and important, as the popular idea that the superior race always gains on the inferior seems to be too readily taken for granted; but I forbear, as the connection of all this with Dr. Charnock's paper may be too remote.

"I wish also, however, to draw attention to the fact that the settlement of Germans in Transylvania, who may have been among the ancestors of the present Transylvanian Saxons, dates far beyond the period usually assigned. When the Gepidæ were overwhelmed by the Avars, with the assistance of the Longobards, they were not extirpated; Long afterwards, in the course of an invasion of Hungary, or rather of the Avar country, by an army from the Eastern Empire, the ravagers came upon and pillaged three communities of Gepidæ, who seem to have been living quietly as subjects of the Avars, and taking no part in the war. Wave after wave of conquerors, or devastators, subsequently rolled over the country, but just as the remains of some other of the early occupants seem to have escaped destruction by amalgamation with the Slavonic tribes, and to have left their race types among these, in the hilly regions of northern Hungary, for example; so it seems to me likely enough that fragments of the once formidable Gepidæ may have endured, as subject agricultural communities, in some remote Transylvanian valleys, till the advent of a people so near akin to them as the Saxons from Westphalia and the Lower Rhine, with whom they may easily have amalgamated.

"JOHN BEDDOE."

Mr. LEWIS observed, in reference to that part of the paper which stated that divorces are more common among the Saxons than the Magyars, that it showed a greater want of chastity among the former than the latter. This was in accordance with statistics which he had

* See Boner's *Transylvania* on this point.

seen relating to illegitimate births, but did not support the views of the admirers of the Teutons, who claimed chastity as a specially Teutonic virtue.

Mr. PIKE hoped that some one would have added to the information in the paper about Transylvania, which seemed to be a place where much interesting information might be got, for many different nations were located there, and it might be regarded as a great battle-field of anthropology. Mr. Pike proceeded to criticise the paper, which he described as containing too little definite information, and as quoting authorities of doubtful credibility, and he characterised it generally as being "inaccurately statistical." One thing, however, he said was to be gathered from the paper: that Dr. Charnock had altered his opinion on one important point. He used to say that language was everything in distinguishing different races, but in this paper he quoted opinions about the forms of the skull, from which it appeared that he now thought that there was something besides language to be taken into consideration in anthropology. He congratulated Dr. Charnock on having made that distinct advance in anthropological science.

Dr. NICHOLAS thought the paper had given much information on an interesting subject. The reason why the Saxons of Transylvania spoke Low German was that they had emigrated into that country in large numbers from the region between the Rhine and the Elbe, taking of course their language with them.

Dr. CHARNOCK thanked Dr. Carter Blake for his remarks on the two Transylvanian crania in the Society's collection. The decrease of the Transylvanian Saxons, referred to by Dr. Beddoe, was a curious fact, because it was an actual decrease; but it was first necessary to get at a proper return. According to Boner (quoting, no doubt, Bilz) in 1787 the Saxons numbered 302,204, and in 1850 192,482; whilst another author made it 237,000 in the latter year. Again, Malte-Brun put down the Saxons at 483,000, but the date of the return was doubtful. Dr. Charnock had only glanced at Mr. Boner's work, but if he remembered rightly, the causes for such decrease, given by the author, were over-work, deficiency of food, early marriages, and inter-marrying, Dr. Beddoe seemed to be of opinion that the Saxons of Transylvania were not of modern importation, but were descended from the ancient Gepidæ. These Saxons, however, had their traditions and history. The Gepidæ were, as a nation, almost destroyed in the sixth century, some of them being carried into Italy; others joining the Lombards; whilst the remainder became slaves to the Avars of Hungary. It was quite possible that some of the present races of Transylvania were descended from the Gepidæ. The Saxons, however, did not accord with the Gepidæ of Procopius and Salvianus, who described them as *gens inhumana*, whilst they did, to a great extent, agree with the Germans of the present day. The chief difference between the Transylvanian Saxon skull on the table and the typical Teuton was that the latter was usually orthognathous, whilst the present specimen was prognathous; they were both, however, brachycephalic. Mr. Pike asked for authorities for certain statements in the paper. Most of

the facts were vouched for; nearly fifty authorities would be found cited.

A communication was then made, contributed by Lieut. EARDLEY WILMOT, "On the Hair of the Hovas of Madagascar," accompanied with specimens; and Dr. Beigel read a report of a microscopic examination which he had made of the hair.

The meeting adjourned, after a short discussion, till the 18th inst.

MAY 18TH, 1869.

L. OWEN PIKE, Esq., Vice-President, in the Chair.

THE Minutes of the previous meeting were read and confirmed.

The following list of presents was announced, and thanks were voted to the donors.

FOR THE LIBRARY.

From J. W. JACKSON, Esq.—The Argument, *à priori*, for the Moral Attributes of God (two copies). The necessary Existence of God (two copies), W. H. Gillespie.

From J. FRASER, Esq.—Gathering from Grave Yards, by A. Walker. The Narrative of Captain David Woodard.

From Dr. DELGADO JUGO.—Discursos leídos en la Sesión inaugural de la Sociedad Antropológica Española, 21 Feb., 1869, Don Francisco F. Gonzalez and Dr. Delgado Jugo.

From Dr. JAMES HUNT.—M. Edouard Filhol, Dr. F. Garrigou. De la Femme dans l'état social de son Travail et de sa Remunération; M. B. de Perthes; Congrès Medical International de Paris. Köhlerglaube und Wissenschaft, Dr. Carl Vogt. Natur Wissenschaft und Bibel, A. Wagner.

From the SOCIETY.—Reports of the Royal Society of Northern Antiquaries.

From the SOCIETY.—Proceedings of the Royal Society.

The CHAIRMAN directed attention to the skeleton of a gorilla which was standing on the table. He said it had been presented to the Society by T. Craston, Esq., and had been contributed and set up by private subscription among the Fellows, as such an object was not considered to be strictly one to which the general funds of the Anthropological Society could be appropriated. It was pronounced to be one of the most perfect skeletons in this country.

The following paper, contributed by Mr. HODDER M. WESTROPP, was then read.

On the Mythic Age.

There is no greater evidence of the intellectual unity of the human race, than the similar and almost identical myths evolved in different and remote countries. The human mind pursues the same path among all races in its struggle to emerge from darkness into the light of civilisation. The same phases of mind follow in orderly sequence. One of the most remarkable of these phases is the evolution of the mythic period in the progressive development of nations, correspond-

ing to the youth or imaginative or fable-loving age of the individual man.

The various myths, legends, fables and other products of the imaginative phase of man's mind in different countries, presenting a marked analogy, prove the spontaneous tendencies of human thought and imagination are similar in all countries, at a certain stage of their progress. They are phenomena of the human mind, developing themselves in accordance with laws peculiar to the mind of man in the youthful stage of his development. They are rude attempts in an uncivilised and unphilosophical age to solve the unintelligible phenomena of nature, those ever recurring phenomena suggesting like and analogous ideas to all races. As all the manifestations of nature are connected with each other by the common principle of being, and as all exercise of reason must give birth to somewhat similar results, so also the mythic offspring of the mind must bear a kindred relationship and likeness to each other. The uniformity of the operations of mind and instinct among all races will necessarily produce these similarities.

In the life of every nation or community left to its own natural career, there is *necessarily* a primitive mythic or mythopœic age during which all men express themselves by means of concrete fictions, created according to their momentary impulses; and these fictions aggregating themselves, are formed by degrees into a mass of mythical substance; in the life of the individual man also, there is invariably a youthful period, in which the tone of fiction and the poetic and imaginative elements predominate. It can be shown that in every nation, as in each individual, the same stage has been gone through, each passing through the same phase and subsequently advancing out of it, for every evolution or phenomenon of the human mind has its allotted period in the sequence of the stages of its development.

As Dr. Draper remarks, "There is a progress for races of men as well marked as the progress of one man. There are thoughts and actions appertaining to specific periods in the one case as in the other. Without difficulty we affirm of a given act that it appertains to a given period. We recognise the noisy sports of boyhood, the business application of maturity, the feeble garrulity of old age. We express our surprise when we witness actions unsuitable to the epoch of life. As it is in this respect in the individual so it is in the nation. The march of individual existence shadows forth the march of race existence, being, indeed, its representative on a little scale." The mythic period is thus the invariable and necessary evolution of the youthful phase of man's development, as well in the individual as in the aggregate.

Man being endowed in all races with the same instincts, capacities and faculties, works out similar conceptions and ideas, according to the stage of his development, for the mode of action of human organisation is uniform in all climes. In the early stage, like the child, he extends his personality to all he sees, he transfers his human attributes, his feelings, passions, vitality to all external and material things, he invests the trees, the winds, the rocks, the rivers with consciousness and will, he seeks to bring all nature into harmony with his human

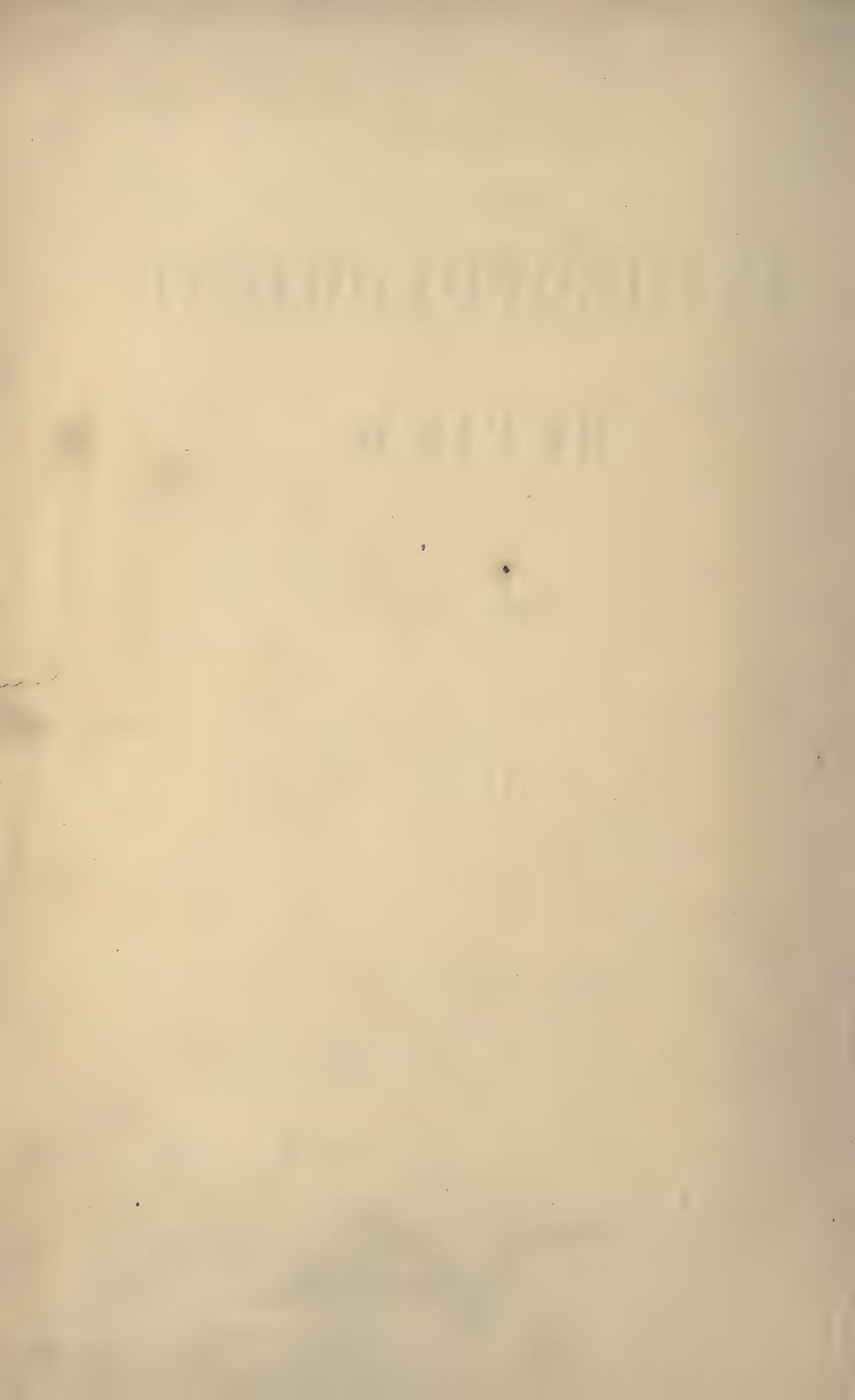
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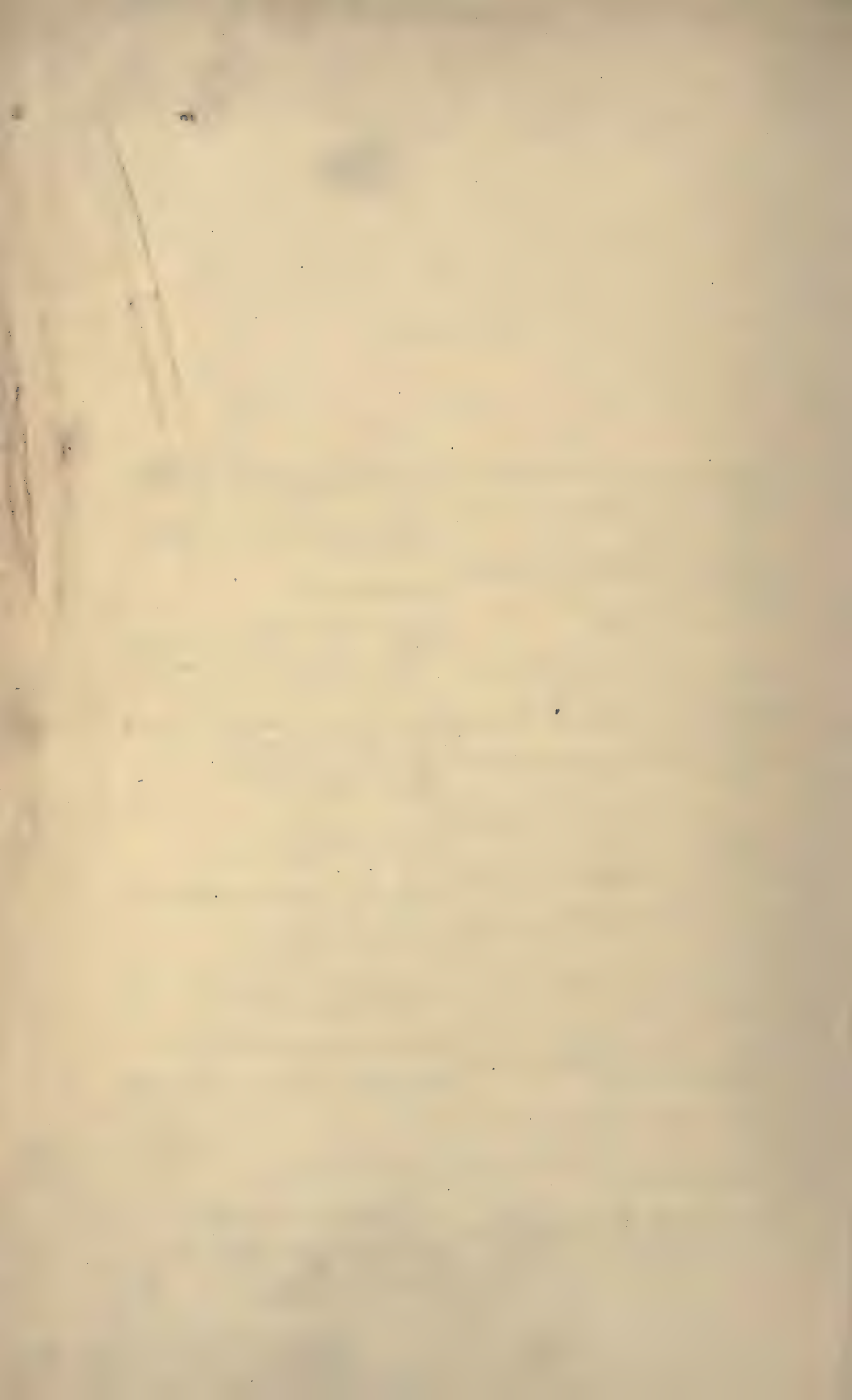
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APRIL, 1870.

ON THE ACCLIMATISATION OF EUROPEANS IN THE UNITED STATES OF AMERICA.

BY JAMES HUNT, Ph.D., F.S.A., F.A.S.L., etc.*

AT the Meeting of the British Association at Manchester, in 1861, I had the honour to read a paper on the Acclimatisation of Man.† I now propose to bring again this important subject under the notice of the Association, by directing attention to the same question. I purpose to take, in the first place, the United States of America, and to consider the question of the cosmopolitanism of man with reference to the great American Republic. I am induced to commence with the United States, on account of the importance of the subject to the English nation in particular; and because it is a portion of the globe where the pernicious influences of a change of residence are so slow in their operation as to prove very deceptive to superficial observers. I propose to show that not only travellers, but even the Europeans in America, are beginning to discover that this physical metamorphosis, which has developed the so-called Yankee type, acts in such a manner as to render the perpetuation of the old stock of settlers a matter of grave doubt, and that as things are, and are likely to be, for some time to come, the immigrant population and their descendants are perpetually filling up the places of the former inhabitants, or primitive settlers and their offspring. This must inevitably be the result of the rapid decrease of the number of births of the old stock in proportion to their deaths; while, on the other hand, the new settlers are said to produce from two to three times as many births as the Americans. This is, at least, the case with one of the oldest

* This paper was prepared by the late Dr. Hunt for the meeting of the British Association at Exeter in 1869.

† Printed at length among the Reports in the *Transactions* of the Association for the year 1861.

and healthiest states of the Union, and we may rationally conclude that it will be the same in the new and younger states when the inhabitants shall have resided in them the same length of time. Since my last communication, attention has been directed to this question by several of our colleagues in Paris, as well as on the other side of the Atlantic.

The history of the rise and progress of Anthropological science has sufficiently indicated to us that the masses of mankind strongly object to be informed of anything relating to their past or future history which is not in accordance with their own wishes. We cannot, therefore, wonder that the Europeans settled in America have not discussed this question, which so nearly affects their future destiny, with that philosophical calmness we should desire; and that they dismiss, as altogether beyond the limits of possibility, such a question as the probability of the degeneracy of their physical condition, which may end in total extinction.

Such a result as the total extinction of the Anglo-Saxon race in America is, perhaps, impossible, for this reason—the improbability that the supply of immigrants from Europe will ever entirely cease. As long as that continues, so long will new blood be supplied to replenish the degenerate condition of the early American settlers, and so long will people—at least superficial observers—be blinded, or sceptical, as to whether the continuation of the race is due to a never ceasing supply of immigrants, or to the healthy reproductions of the old stock. Such a question would be finally solved were it possible to entirely separate the immigrants and their descendants from the old settlers. This has been done in the case of Massachusetts, and it fully shows that the American race is being replaced by foreign immigrants. How far this is the case with reference to the other States I can not at present tell, but I shall show in the sequel that, according to American statisticians, the reproductive power of the original stock is said to have decreased 10 per cent since the beginning of the century. The Americans, however, instead of looking for the true solution of this question, attribute it to other causes, and deny—or rather treat as nonsensical—such assertions as those which attribute it to a degenerate physical condition produced by the influence of an unfavourable climate and other allied influences. To this there are honourable exceptions; but, as a rule, the cosmopolitan power of man, and especially of the Anglo-Saxon race, is still one of the many popular delusions which are held as firmly in America as in Great Britain.

The question before us is a very large and a very difficult one. With respect to America it is rendered doubly complex by the animus

which has been shown against those who hold opinions such as those I have been obliged to adopt from the facts before us, and against those, especially, who venture to express such opinions; as well as, in the second place, by the scantiness of faithful and reliable statistical evidence. It is thus difficult to obtain either unbiassed opinions or pregnant scientific facts. We are consequently compelled either to leave this question undiscussed, or to use such facts and opinions as are available. The question, however, is far too important to leave undiscussed, for, as my late lamented colleague, Dr. Boudin, justly maintained, this problem is the most important in Anthropology, and on it depend all systems of colonisation, as well as recruiting for foreign stations. To this country especially it is of the greatest practical interest, and it is growing in importance day by day; no apology, therefore, need be offered for calling the attention of my colleagues to such facts as have come under my notice during the last eight years. I purpose commencing work with the United States of America, and shall endeavour to follow up the subject by other papers on different portions of the globe. First, then, as to the climatic conditions of this vast Republic.

The climate of the United States is remarkably inconstant and variable. It passes rapidly from the frosts of Norway to the scorching heat of Africa, and from the humidity of Holland to the drought of Castile. A change of 20 deg. or 25 deg. Fahr. in one day is not considered extraordinary—a phenomenon which is attributed to the fact that the passage from the heat of the tropics to the cold of the arctic regions is not obstructed by any considerable mountain chain, running from east to west. The north-west wind, sweeping over a vast frozen surface, acquires an intense degree of cold and dryness, which operates very injuriously on the human frame; whilst the south-east, blowing across the Atlantic, adds greatly to the insalubrity of the littoral regions with which it comes in contact. The south-west produces the same effects in the plains at the foot of the Alleghanies. The mountains, however, are more salubrious, as is proved by the blooming aspect of the young persons among those who inhabit them. With regard to the relative salubrity of the various States, it is well known that those inhabiting the lower country bordering on the Atlantic, and those situated on the banks of the Mississippi, Ohio, and Missouri, are less salubrious than those surrounding the Alleghanies, and those situated on the shores of the Pacific. On comparing the opposite sides of the Atlantic, we find the extremes of temperature, and especially that the winter's cold is more severe on the west. The mean temperature of the year is about 9 deg. Fahr. lower at Philadelphia than in corresponding latitudes on the coast of Europe. With such a

variable climate, it cannot be wondered at that that pestilent disease, the yellow fever, should make its ravages among the population of several southern States. Accordingly, we find that the countries situated on the Mississippi and Missouri, as well as some parts of Virginia, South Carolina, and Florida, present the highest rate of mortality.

Though situated upon nearly the same isothermal line as central Europe, the United States present many peculiarities in respect to climate. Emigrants from Europe, who arrive at New York or Boston, at first find no great difference between the American climate and that of the country from which they have just departed. They soon find out, however, that they are obliged to relinquish their former habits and adopt those of the Americans, which hitherto they have much criticised. These curious alterations are of two kinds: those that relate to ordinary life, and those which are observed in the exercise of certain trades.* Among the first is seen the astonishing facility with which the laundress can get her linen dry, even in the depth of winter, so much so that this task lasts but half the time it does in Europe. It is this that renders prevalent the custom, universal in America, of washing every week. On the other hand, a great inconvenience awaits the housekeeper who ventures to make bread sufficient to last for several weeks, as she has been accustomed to do in Europe. Although prepared in the same manner as in Europe, the bread is found to harden, and ceases to be eatable after some days. She accuses the quality of the flour, then that of the water, and ends by adopting the American custom of making bread at least every two days. But this dryness has its advantages. Mouldiness is much rarer there than with us; winter provisions are rarely spoiled from this cause. Cellars in particular, unless placed in damp and low situations, are excellent, and fruit and vegetables may be preserved for a much longer time and much more safely than with us.

The experience of artists and tradesmen is not less significant. Builders know no necessity of allowing their buildings to dry for a season before habitation. The mason is scarcely gone out before the tenant enters, and that too, without any fear of the rheumatic affections so commonly contracted by us in new buildings. Painters may apply much more rapidly a second coat of paint or varnish, without the quality of the work being at all affected. On the other hand, much greater care must be taken by cabinet-makers and musical-instrument makers in the choice of the wood they use. Wood which would be deemed in Europe sufficiently dry, cannot be admitted into

* See Professor Desor on this subject, in Boudin's *Géographie Médicale*, etc.

the workshops of cabinet-makers of Boston and New York. It would twist and crack in a very short time. Inlaid floors require extreme care ; very few are seen, even in the most opulent houses. American pianos are thus esteemed more than European ones, for although the latter are well suited to Europe they soon deteriorate in America. Joiners are obliged to make use of a much stronger glue than would suffice for their work in Europe. Tanners have remarked that skins dry much sooner than in Europe, this enables them to get more work done in a given time. In winter they find this difference is especially notable. It is well known how much trouble we have to preserve our natural history collections from damp, especially in new buildings ; we are obliged to make use of lime or other absorbents for the purpose. But in America nothing of the sort is required. In Boston there are such collections in apartments when the plasterer has just left, and one never dreams of using absorbents. On Mr. Desor making this remark to the inspector, telling him he feared those precious objects would spoil : " You forget," he answered, " that we are in New England and not in Europe."

All these phenomena are attributable to the dryness of the air. The quantity of rain which falls in the United States is not only not less but is greater than that which falls in Europe. Thus, there falls annually in Boston 38.19 inches ; Philadelphia, 45.00 inches ; St. Louis, 31.97 inches. While, in Europe, there falls in England 31.97 inches ; France, 25.00 inches ; Central Germany, 20.00 inches ; Hungary, 16.93 inches. This dryness is easily accounted for, notwithstanding the above apparent contradiction. The winds which predominate are those from the west. On our coasts the west winds are charged with humidity, having swept over the Atlantic ; but in the New England States, the west winds arrive after having swept over a vast continent, and consequently are less charged with humidity than in Europe.

The first attempt of the English to form settlements in America was on the coast of Virginia, where Sir Walter Raleigh founded a small colony. The climate proving unfavourable—the coast in that part was and is far from healthy—the settlers were reduced to such a state of misfortune that they abandoned this settlement and prevailed upon Sir Francis Drake, who called there on his return from the West Indies, to take them home. Since that time, however, the English have proved more successful ; but whether they have fully succeeded in establishing a permanent self-supporting colony even in North America is not yet, strange as it may appear, demonstrated.

The English colonies of America, numbering thirteen in all, were founded during the seventeenth century, with the exception of

Georgia, which was not founded till the eighteenth century—not exclusively by the English, Scotch, and Irish, for most other European states had a share in it, such as the French, Germans, Belgians, Swiss, Dutch, and Swedes. Delaware was founded by the Swedes, and New York by the Dutch, whilst both these nations helped to found the state of New Jersey. The Anglo-Saxon race, however, by far predominated, as is proved by their being under the protection of Great Britain. Death at first reaped a good harvest among those who cultivated the soil, but these evils gradually disappeared before the labours of man, and, aided by continued emigration from all the countries of Europe, the colonists continued to increase in numbers and strength till they compelled the mother country to acknowledge their independence. At and before this time it was extremely difficult to distinguish the influence of the climate on the colonies by reason of the incessant and increasing immigration. Nevertheless, we know that it is an indisputable fact that those resident in the southern states furnished relatively a less number of descendants than those of the more temperate localities, the climate of which approximates to that of their native country. Even at the present day, as I shall have occasion to show, there is no such thing as real acclimatisation of Europeans or of Americans themselves in the tropical parts of the United States.

At the time we are reviewing there had been no regular census taken. After the recognition of independence, however, the Americans turned their attention to this question, and in 1790 the first American census was made. By this time it will be seen that the American people had become sufficiently attached to the soil, and modified by the influence of climate, to be recognised as a distinct nation, and we are able to trace its progress as such. This was rendered more easy by the almost complete cessation of immigration, owing to the wars which ravaged Europe at the end of the last and at the beginning of the present century; and also to the struggle which took place between the United States and England in 1812. During this period, according to Blodges, Seybert, and other American statisticians, the population of the Union was left almost entirely to its own reproductive force, immigration having almost entirely ceased from the year 1790 to 1817. It is said that from 1790 to 1810 there were but 6,000 individuals furnished by immigration. However, too much reliance ought not to be placed in these figures; they are, at most, but conjectures, for nowhere in the United States was the registration of immigrants obligatory. However this may be, it is certain that from 1817 date the most abundant emigrations which Europe has since poured from all sides into the United States. Recently authors and statisticians have endeavoured to distinguish the increase of popula-

tion due to immigration, and that due solely to the excess of births over deaths of the old stock of Americans; all, however, are forced to start with suppositions, more or less hazardous, and consequently they arrive at very different results.

Mr. Tucker,* an eminent political economist of the United States, establishes his conjectures and calculations on the amount of duty paid to the custom-house in different parts of the United States and on the decennial census. The following extracts from his work are quoted and criticised by M. Carlier in an admirable memoir read before the Anthropological Society of Paris, and published in the *Memoirs of the Society*:†—

First census, 1790, whites		3,172,464
Increase of population from 1790 to 1800, 35·70 per cent., or 3·57 per annum	35·70	
Approximate number of immigrants, 58,000, or 1·80 per cent.	1·80	
Natural increase of the old stock	33·90 or	1,075,465
		<u>4,247,929</u>
From 1800 to 1810 : Increase of population, 36·20 per cent.	36·20	
Population of Louisiana added to the Union, 1803 (51,000)	1·20	
Immigration.....	1·90	
	<u>3·10</u>	
Natural increase.....	33·10 or	1,406,064
		<u>5,653,993</u>
Increase, 1810 to 1820, 34·30 per cent.....	34·30	
132,400 immigrants	2·20	
Natural increase	32·10	1,814,932
		<u>7,468,925</u>
Increase, 1820 to 1830, 33·80 per cent.....	33·80	
231,000 immigrants	2·90	
Natural increase	30·90 or	2,307,897
		<u>9,776,822</u>
Increase, 1830 to 1840, 34·70	34·70	
540,000 immigrants	5·10	
Natural increase	29·60	2,929,136
		<u>12,705,958</u>

* *Progress of the United States in Population and Wealth in Sixty Years, from 1790 to 1850.* New York, 1855.

† Tome iii, 1868, p. 37.

Brought forward.....	12,705,958	
Increase, 1840 to 1850	26·09	
Immigrants	1,840,227	} 3·00
200,000 inhabitants by the annexation of Texas, New Mexico, and California	200,000	
Natural increase.....	23·09	2,040,227
Total number of primitive population, and increase caused by excess of births over deaths		14,746,185

Here ends the work of Mr. Tucker. If we wish to extend these statistics to the year 1860 by the aid of the last census, we are surprised to find ourselves face to face with results so dissimilar that we are constrained to ask where is the error? We see from the above that the productive power of the white population decreases year by year at a rapid rate. For instance, in 1790 the natural increase is 33·9; this decreases regularly in the four following periods as follows: 33·9, 33·1, 32·1, 30·9, 29·6, 23·09; whilst the last census, that of 1860, pretends to show that the increase of population has been thirty-eight per cent. for the ten years from 1850 to 1860—that is more considerable than any other periodical increase. According to M. Carlier, we must deduct for immigration, which is mixed up with this, 5 per cent.; but still there remains 33 per cent., which is equal to the most favourable period, and 10 per cent. more than that of the previous one. The author of the census says that this difference is not so large as it appears at first sight, for in the previous period, in 1849, the cholera had exceptionally affected the increase; but, as M. Carlier justly points out, this cause of mortality affected only one year in ten, and then carried off no more than 31,506 individuals from a population of nineteen millions and a-half.

In addition to this, we find that the number of emigrants to the United States given in the statistics of England and Germany, is much above that stated in the American documents. It follows from these facts, adds M. Carlier, that the census of 1860, though emanating from Government agents, is defective in many respects, especially with regard to immigration; and he believes that they attribute to the natural reproductive power a greater share in the increase of population than really belongs to it, and which should by rights be attributed to immigration. The agents of the United States Government take account only of ships having on board masses of immigrants, without reckoning those who arrive in isolated numbers, neglecting also those who arrive through Canada. The census of 1860 recognised this fact without, however, avowing the decisive influence it would have on the results of the census. Let us now follow M. Carlier in his extension of Mr. Tucker's figures to the year 1860.

White population, 1860	26,975,575
Compared with that of 1850	19,552,114
Increase from 1850 to 1860	7,423,461
Deducting from this: 1. The proportional part which the immigrants, anterior to 1850, contributed to the production of the population; 2. The 2,707,624 immigrants who arrived from 1850 to 1860; and 3. The number of children of these immigrants born during this period. These would amount, at least, to one-half the increase.....	3,711,730
	<hr/> 3,711,731
Primitive stock in 1850.....	14,746,185
Total primitive stock in 1860	18,457,916

Other American statisticians have endeavoured to calculate in a different manner the number of the descendants of immigrants, but, being forced to start with a hypothetical figure, they arrive at no really satisfactory results. Thus the Commissioners of Census in 1850 turned their attention to this.

They estimated the number of European immigrants to the United States, from 1790 to 1850, at	2,240,535
And supposed their probable descendants to amount to.....	2,063,881
Total.....	<hr/> 4,304,416

M. Carlier, in extending this calculation to 1860, supposes that as the decimal increase of population in the United States varies from 23 to 33 per cent.,

The productive increase of immigrants would amount to 25 per cent. during these ten years	1,076,104
Which, added to the above	4,304,416
Amounts to	<hr/> 5,380,520
This should be increased by the European immigration during this period	2,707,624
And the populations of Texas, New Mexico, and California	200,000
	<hr/> 8,288,144
Finally, we must add to this the number of descendants of these immigrants and annexed states 25 per cent., but only reckoned on five years, as these were added at different times during ten years	363,453
Thus, the European immigration and annexed states furnished, since 1790, a total number of	<hr/> 8,651,597
Deducting this amount from the total number of inhabitants, according to the Census of 1860.....	26,975,575
There remains for the primitive stock	<hr/> 18,323,978

That is to say, a total equal, within 100,000 individuals, to that furnished by Mr. Tucker's calculations, which were based on a different but equally hypothetical operation.

It is very curious to examine the rate of mortality in the United States ; but, so little care has been taken, that it is next to impossible to arrive at exact, or even approximate results. In 1850 the census announced that the mean rate of mortality in all the union was 1 in 72 persons ; and the relative number of deaths in several parts of the union sufficiently shows that no reliance can be placed in these figures. Thus in California we find that it is as low as 1 in 102, while in Oregon they reckon 1 in 283 inhabitants, which compared with 1 in 44, the mean rate in England and France, is something enormous. Louisiana, one of the most unhealthy states, furnished as high a rate as 1 in 44. But the most salubrious and most ancient state is that of Massachusetts, which may serve as a type. The mean mortality for 1849, 1850, 1851 was said to be 1 in 53.

As to the census of 1860, M. Carlier tells us that it indicates a less mortality than even the preceding one, namely, 1 in 79 for the whole union. The author of the census, comparing this result with the mean mortality of the different states of Europe, could not retain his surprise at the considerable difference which exists between 1 in 79, and 1 in 36 in Prussia, 1 in 42 in Belgium, and 1 in 44 in France and England. He gives as a reason the young blood continually diffused among the population by the arrival of immigrants who are generally in the prime of life, and the superior physical condition of the Americans ; he acknowledges, moreover, that there must be great defects in the accounts of mortality taken in different places. With regard to the incessant arrival of immigrants, there is no doubt of the fact that such a quantity of new and young blood exercises an enormous influence on the rate of mortality of the Americans. This becomes the more manifest as the immigrants are invariably in the prime of life, and leave the sick, weak, and aged behind. Consequently, when compared with the mother country, there is a considerable difference in the number of deaths. But if it were possible to compare a number of young persons of the same age and position at home with a similar number who emigrated to America, we should, I have no doubt, find the balance greatly in favour of those at home ; but when we have to include with the rest the weakly and aged persons belonging to the emigrant families we place the health of those at home in an unfavourable position. M. Carlier does not agree with the author of the census of 1860. "He forgets," he says, "no doubt that he said some pages above that the cholera, among other diseases, had attacked foreigners (immigrants) more than the natives. Strange contradictions,

not less strange than the proposition that it wished to defend! He does not remember, further, having signalised as the cause of great mortality the small-pox, which is now nearly inoffensive in Europe, thanks to preventive means very much neglected in the United States, where it finds many victims. "Everyone knows," he continues, "the little care that the Americans take of human life, and the great number of individuals who perish by railway and steamboat accidents, etc." He therefore considers that these figures ought to be much abated, and accordingly accepts as more correct the calculations of Mr. L. W. Meech, who, by the aid of ingenious calculations, established that the average rate of mortality in the United States since the beginning of the century has been 1 in 45 or 46, which approaches very nearly the mortality of England and France.

I may here observe that the registration of deaths in America is well known to be carried on in a very loose style. In fact, people are pretty much in the habit of doing as they please with respect to this important duty. In a discussion before the Anthropological Society of Paris,* M. Bertillon, in reply to an assertion that some States of the Union experienced a mortality of 5 per 1000, or one-half per cent., said: "What population can show a mortality so low? A population not only without children and old people, but of whom the individual age should be comprised between 12 and 14; for this is the only age, in England as in France, in which the mortality can descend so low as one-half per cent." These figures, he continues, published by the States, have for their *raison d'être* a fact well-known to him. "In America," he says, "the law does not enforce the registry of deaths. In many States it is only done when the relations have an interest in doing so; children, people without relations who take an interest in them, etc., are not registered. Hence this impossible number of 5 deaths per 1000 inhabitants; that is a fifth of the mortality of Europe!"

Accepting the figures of Mr. Meech as nearer the truth than those of the census of 1860, namely, that the rate of mortality of the United States amounts to 1 in 45 or 46 persons, M. Carlier asks: "But if the rate of mortality approximate to that of England, how is it that we find so great a disproportion between the two countries with respect to the excess of births over deaths? We have seen above that they attribute to the American stock of 1790 a progressive increase which, save during the period from 1840 to 1850, ranges from 29 to 33 per cent. for each of the other periods,—from 2·99 to 3·36 per cent. per annum. But never has the English census shown an increase of population for England and Wales equivalent to even half the average

* Bulletins of the Society, vol. v, p. 839.

found by Mr. Tucker! Is it because the English who remain on their native soil have lost the power of reproduction which their brothers of America had retained? No one would dare to sustain such a proposition; it is sufficient to have visited England to know the amplitude of their families, and whoever has lived in the New World can affirm that the American people have no advantage in this respect. The work of Mr. Tucker," he continues, "rests on an exaggerated basis of more than double what it should be." He is, therefore, of opinion that the primitive stock of Americans, with their increase, instead of being placed at 18,457,917, should be reduced by about 9,000,000; and that immigration, instead of being only eight millions and a-half, should be put down as eighteen millions and a-half. To prove these assertions, M. Carlier has recourse to another American statistician, M. Schade, an esteemed advocate of Washington. According to this gentleman, the excess of births over deaths in the United States is not more than 1·38 per cent. This, though greatly in excess of European countries, is much more credible than the calculations of Mr. Tucker. Compared with European countries, we find in the census of 1850, England, Wales, Scotland, and Ireland, 1·25 per cent.; 1850, Holland, 1·23 per cent.; 1849, Prussia, 1·17 per cent.; 1852, Saxony, 1·08 per cent. Supposing, then, that this increase is more correct than that of Mr. Tucker, M. Carlier calculates that the primitive American stock of 1790, amounting to 3,872,464 individuals, would have increased by its natural productive force in 1860 to 8,435,882. Deducting this from the whole white population of 1860, 26,975,575, we find that the number of immigrants and their descendants would amount in 1860 to 18,539,693.

Mr. Schade also attempted to calculate the relative increase of population in the four principal regions of the United States, but could arrive at no exact results. However, as far as his calculations go, they tend to show that in proportion as the climate is less favourable, the relative increase of population is proportionally less. Thus the Slave or Southern States increased less than the Free or Northern States. But these conjectures can have no real value as to the question of fecundity, as the population of America, independently of immigration, is continually on the move. Vermont and Connecticut, for instance, remain almost stationary, because their young population annually emigrates towards the west. And until this continual movement of population has subsided it will be difficult to get statistics sufficiently exact to be able to use them to support scientific theories.

Further statistics and calculations of M. Carlier tend to show that the Anglo-Saxon element of the United States population is not so

large as is generally imagined. Into these calculations I shall not now follow him, but I may say that his conclusion is "that we should attribute the civilisation established in this country (the United States) to the common efforts of all the races of Europe, among which the French blood has left its trace in a very creditable manner."

In speaking of the presumed causes of the decrease of reproduction in the United States, M. Carlier says that in looking over the scale of decennial increase of the population (as given by Mr. Tucker) the mind is struck by a circumstance altogether unexpected. The reproductive power is seen to relent and even decline in a notable manner. As we have seen above the natural increase descend from 33 per cent. in the period from 1800 to 1810, as low as 23·9 per cent. from 1840 to 1850. "In searching for the cause of this grave fact," he says "Mr. Tucker and some others with him pretend that the proportional increase cannot always follow the ascent of the population, and that the more the latter acquires density, the more the means of existence are restricted, and the less active will be the fecundity. This proposition is true in general ; but the United States, where the sources of fortune superabound, have not yet arrived at this plethoric condition. The author (Mr. Tucker) invokes no great appreciable cause ; he speaks neither of the influence of climate, or of the soil-clearing in the west, nor of any other striking circumstance which acts powerfully on the organism of the old and new inhabitants." Mr. Tucker attributes this decrease to the influence of luxury, which requires more resources to satisfy it than can be indulged in with large families. "These exigencies," continues M. Carlier, "retard marriages, they render people prudent, I may say even sordid, in the increase of their families. Mr. Tucker and the other economists have only discreetly touched on this delicate question, so much does it exact reserve when treated by an American pen and addressed to Americans. "As for myself, I am not at all governed by the same motive. . . . One of the causes which contribute to the decrease of reproduction in the United States is *the abortion prevalent in all classes*. I have found the proof of this," he continues, "in well-informed journals in all parts of the American Union, especially in medical publications which are an excellent source of information. The populations considered as the most religious, such as those of the New England States, the country of Puritanism, and Pennsylvania, the cradle of *quakerism*, are themselves denounced by the semi-official organs, as infected with this social vice."*

* In support of this assertion, he quotes at some length a discourse delivered by Professor H. L. Hodge, on "Criminal Abortion," Philadelphia, 1854. See same title by Dr. H. Storer of Boston, Philadelphia, 1860 ; and his book *Why Not?* See also *Medical Times and Gazette*, 1860, vol. ii, p. 479.

This gloomy picture of transatlantic morality is confirmed by M. Ambroise Jardien, who, after comparing the criminal state of France with that of New York, comes to the conclusion that crimes of this nature which are committed in this town surpass by far those which are committed in France, other things being equal.* "Shall I add," continues M. Carlier, "that in France this crime is only resorted to in order to conceal a fault, whilst in the United States it has invaded the married state with the complicity of the husband? This state of things, so different from that practised by the founders of the colonies, who gloried in raising large families, may account, in part at least, for the signal decrease in the natural production of the population, without the cause of acclimatisation being at all injured by it."

I am much inclined to doubt this conclusion. In my opinion the relative proportion of crimes of the above nature, were it possible to fathom every case both at home and in America, would not be found so greatly against the United States as is imagined by Mr. Carlier. It may possibly not be kept so inviolably secret on the opposite side of the Atlantic as in this and the European countries, but I think if the lower classes were compared in this respect, we should find no material difference. As to the higher classes in America, it should be remembered that, as that term is usually used, the higher classes of the United States correspond more to our middle classes. I am aware that this is an assertion to which American pride cannot assent, but it is nevertheless a fact. No one on this side of the Atlantic will assert that American civilisation is an offspring of other than European lower and middle classes, as is proved by the proverbial bluntness of even well-educated Yankees male and female. Comparing, then, all shades of American society with the European lower and middle classes, we should probably not be struck with the difference in the amount of crime of the above kind as at first sight appears. Nor on the imperfect basis that American statisticians are compelled to start from, can we say exactly what are the effects of climate and allied influences on this important decrease of reproduction, but I am strongly of opinion that it may be with more justice attributed to this cause than to that given by M. Carlier.

In France, whether through abortion or otherwise, we see that the number of children is voluntarily limited, and that it is not without reason. M. Carlier however seemed to ignore this when he attributed a greater ratio to American families.

Something of this kind has been noticed by Mr. Hepworth Dixon in his talented work on *New America*. According to him, there is a mysterious conspiracy among the ladies of fashion in America, the

* *Annales d'Hygiène Publique et de Médecine Légale*, 2e serie, t. v, p. 113.

end of which would be that there would be no more "baby shows" in that country. In pious Boston and Philadelphia, no less than in wicked New Orleans and New York, this objection to become a mother in Israel is, he says, one of those radical facts which must be admitted. The rapid diminution of native-born persons being recorded in many public acts. America, he was told, is wasting for the want of mothers. The tale which seems so sadly written on the floor of every room you enter is also told at large in the census returns. The only States in which there is a healthy rate of increase are those wild countries peopled by new settlers, Oregon, Iowa, Minnesota, Mississippi. Strangest of all, he says, is the sad example set to the rest by Massachusetts, that religious centre of New England, the intellectual light of the States. In Massachusetts young women marry, but seldom have children. The registration of marriages shows a balance in favour of the natives, but the births run quite in favour of the foreigners. Power, which lies with the majority, is rapidly passing over to the Irish poor. In thirty or forty years these foreigners and their descendants will be the majority of men in Massachusetts. Such is the testimony of Mr. Dixon. I find it is fully borne out by facts. It is said, that the deaths even exceed the births of the old American stock in Massachusetts, and that the equilibrium is only maintained by the births of the immigrant population. See what figures are produced by Dr. Allen of Lowell on investigating the changes of population of Massachusetts, of which state, he finds, says the *Springfield Republican*,* that in thirty or forty years, the native-born will be in a minority. His figures show, not merely that the foreign population of the State increases more rapidly than the native, but that in fact the native population is diminishing year by year, and the increase is altogether foreign. In 1864 the births in the state were 30,449, and the deaths, 28,723; in 1865, the births 30,249, deaths 26,152. The births exceeded the deaths in 1864 by only 1726, and in 1865 by 4,097. But the foreign population have from two to three times as many births as the American, and it follows that the American deaths actually exceed the births. Is the old Puritan stock losing its vitality and running out? The town records show that in the first generation of settlers the families averaged from eight to ten children; in the next three generations seven to eight; the fifth about five; and in the sixth less than three. The present is less than this. The old physicians all notice this falling off, and it is remarkable that it is quite as large in the country as in the city. Does it come from our more artificial and unnatural life, producing a

* See *Medical Times and Gazette*, Feb. 9, 1869.

degenerate physical condition of women, or from a settled purpose with the married to have but few children?"

These are certainly important questions and may be open to discussion, but this much is certain—that in Massachusetts, that so-called moral and intellectual centre of the United States, the race of settlers is undergoing a gradual, one might almost say rapid, decay. The first generation averaged eight or nine children per family, the next three, from seven to eight; the fifth about five; the sixth less than three; the present less than this! The deaths exceed the births! The power is passing into the hands of new immigrants.

Now as to the causes of this degeneracy. In my opinion an exaggerated importance has been attached to the crime of abortion, likewise a different construction may be put on the foregoing assertions. If an English woman or her descendants have different desires in this way in America after residing there some years, from what she would have had if in England, there must be some cause for it. Now physical degeneracy would account for it were it proved to exist, and that it does exist I shall produce some facts to prove. Americans are tall and thin, their army statistics prove this. It is truly surprising to find the enormous number of tall soldiers the Americans have when compared with English and especially French. Their glandular system is but scantily developed, and this is more marked in women than in men. The women are subject to serious perturbations in the menstrual function. The facts, which I know of no author of any note, but M. Carlier (who does not discuss it but dismisses it as improbable), to dispute, abundantly account for this degeneracy, this smallness of families, this determination not to have more children than they can provide for, which is in fact, in nine cases out of ten, *not in their power*. It is an old common-place to produce the story of the fox and grapes, but it applies with extra force here. That American women cease breeding early, and are altogether too spare and slightly built to perpetuate their offspring, I shall contend in the sequel, and also that it is the opinion of many of the Anglo-Americans themselves that they will have no descendants in one hundred years.

I consider, then, that the inability of perpetuating their species will be fully proved with relation to Massachusetts, by the figures I have produced above and the facts relating to the degeneracy of women which I shall relate in the sequel. But as to America in general it is difficult to form any correct idea at present. The new states, composed chiefly of emigrants from Europe, of course do not yet offer the same phenomena, and until European and other emigration shall cease, and until the Americans have become more accustomed to re-

main attached to their native states and have given up the continual shifting of situation which is going on at this moment, as it always has been, in the states ; and I may also add, until the Americans in the new states see fit to modify slightly their "free institutions" by enforcing a strict registry of births and deaths, we shall be only uselessly attempting to form scientific theories as to this great and important question of American acclimatisation. Meanwhile it may not be altogether without value that we should inquire into the facts at hand, and also learn what are the opinions of eminent men and keen observers on this point.

I may, however, here remark, that there seems to be some prospect of a decrease of emigration across the Atlantic, if we may judge from English and American records of emigration. It is said that the emigration from Europe into New York in 1868 fell short by 30,000 or twelve per cent. of that of 1867. It is further said that as regards Ireland, at least, this source is "beginning to run dry." Our own records show a difference of 10,000 or twelve per cent. between the emigration of 1867 and 1866. This continued to be the case during the first three months of last year, to which period alone we have returns. If this foreboding should turn out to be true, and should the supply from South-Western Germany also cease (as there are some signs of its doing) we may possibly have a more favourable opportunity of watching the welfare of our brethren across the Atlantic. One of the earliest authors that have come under my notice who has ventured to write on this subject in Kalm.* He observes that the Europeans in North America arrive earlier at the age of puberty, but sooner grow old and die than in their native country. "It is nothing uncommon," he says, "to find little children answer questions put to them with astonishing readiness and vivacity, and yet not attain the age of Europeans. Eighty or ninety years are seldom reached by one born in America of European parents, though the aborigines frequently live much longer ; and the natives of Europe commonly live much longer in America than such of their children as are born in that country. The women soon cease child-bearing, some as early as the age of thirty : and it is generally observed, that the offspring of the European colonists lose their teeth soon and prematurely, while the Americans retain their teeth white and sound to the end of their lives." It will be seen how remarkably these words agree with those uttered by later authors, to which we now proceed. So remarkable is this coincidence, that extracts from various authors, which I intended to have quoted in full, I have considerably abbreviated.

* Gottingen Collection of Travels, vols. x and xi.

As is well known, and often quoted, Dr. Robert Knox, many years ago, gave us to understand that he thought to have found already some signs of physical degradation amongst the Anglo-Americans; these modifications appeared to him to prove that the Americans were in a state of decay; that they would soon become less and less fruitful; and that the soil of North America would be again in the hands, sooner or later, of the autochthones, that is to say the red skins; provided, of course, that the supply of immigrants were cut off. This opinion—a very strange one it appeared to men at that time—has received the partial assent of an eminent American anthropologist, Dr. Nott.* “Though I am not disposed,” he says, “to go to his (Dr. Knox’s) extremes, I do not believe that even our New England States (probably the most healthy of the Union) are so well adapted to those races as the temperate zone of Europe, from which history derives them.” The Germanic races, he adds, in the southern States, “are, in general, a squalid looking people.” As a reason for this “squalidness,” Dr. Nott is of opinion that it is because they sleep between two feather beds, and otherwise are in the habit of violating the laws of health; but, it is presumed, these formerly robust inhabitants lived in the same manner when at home in Germany—in fact, Dr. Nott tells us that they do; can we then attribute this squalid, unhealthy aspect solely to their unhealthy habits? Certainly not. Would it not be a more satisfactory reason to attribute this decline of health to unfavourable media.

Dr. Nott has collected valuable evidence on the question of acclimatisation in the Southern States of the Union. “The fact is so glaring,” he continues, “and so universally admitted, that I am really at a loss how to select evidence to show that there is no *acclimation* against the endemic fevers of our rural district. Is it not the constant theme of the population of the South, how they can preserve health? and do not all prudent persons who can afford to do so, remove in the summer to some salubrious locality, in the pure lands or the mountains? Those of the tenth generation are just as solicitous on the subject as those of the first. Books written at the North, talk much about acclimation at the South, but here we never hear it alluded to *out of the yellow fever cities*. On the contrary, we know that those who live from generation to generation in malarial districts become thoroughly poisoned, and exhibit the thousand Protean forms of disease which spring from this insidious poison.”

He had been, he tells us, examining physician to several life-insurance companies. One of the questions asked was: “Is the party acclimated?” “If the subject,” says Dr. Nott, “lives in one of the Southern seaports where yellow fever prevails, and has been born and

* *Indigenous Races of the Earth.*

reared there, or has had an attack of yellow fever, I answer, 'Yes.' If, on the other hand, he lives in the country, I answer, 'No'; because there *is no acclimation against intermittent and bilious fever, and other marsh diseases.*" The italics are his own, and show how thoroughly in earnest the learned Doctor writes.

Nor is this all. Dr. Nott considered this question as far too important to rest on the evidence of one individual; he accordingly obtained the opinion of several of his professional friends. "All the answers received," he says, "confirm fully my assertion that the Anglo-Saxon race can never be acclimated against marsh malaria." The first letter he publishes is from Dr. Dickson, the distinguished Professor of Practice in the Charleston Medical College. His conclusion is that "The Anglo-Saxon race can never become acclimated against the impression of intermittent and bilious fevers, 'periodical,' or 'malarious fevers.' On the contrary, the people living in our low country grow more liable to attack year after year, and generation after generation." The second letter is from Dr. Wm. Boling of Montgomery, Alabama, "who is well known," says Dr. Nott, "as one of our best medical writers." "Judging from my own observation," he says, "I am inclined to believe that there is no such thing as acclimation to miasmatic localities; in other words, that neither residence in miasmatic locality, nor an attack, nor even repeated attacks, of any of the various shades or forms of miasmatic fevers, confer any power of resistance to what we understand by the miasmatic poison—not regarding yellow fever, however, as belonging to this class of disease. On the contrary, one attack, it seems to me, instead of affording an immunity from, rather increases the tendency or predisposition to another. It would be no difficult matter, I think, to obtain histories of cases of persons born, and continuing to live in miasmatic localities, who have been subject to repeated attacks of miasmatic fevers, occasionally during the entire course of their lives—say from a few days after birth to a moderate old age—'from the cradle to the grave'." Another practical observer, Dr. Samuel Forry, in his valuable work on the climate of the United States, has fully investigated the influence of the Southern climates on the white population; he says: "In these localities, as is often observed in the tide water region of our Southern States, the human frame is weakly constituted, or imperfectly developed: the mortality among children is very great, and the mean duration of life is comparatively short. Along the frontiers of Florida and the Southern borders of Georgia, as witnessed by the author, as well as in the low lands of the Southern States generally, may be seen deplorable examples of the physical, and perhaps mental, deterioration induced by endemic influences. In earliest infancy, the

complexion becomes sallow, and the eye assumes a bilious tint; advancing towards the years of maturity, the growth is arrested, the limbs become attenuated, the viscera engorged, etc."

That all parts of the United States are not equally salubrious, and that the Southern States are those which are the most inimical to the health of Europeans, may be gathered from the statistics of the United States army. From 1829 to 1838, inclusive, the United States army numbered, in the northern provinces, 32,242 men; who gave 281 deaths; while in the Southern States, in an army of only 24,978, there were 823 deaths. That is, in the north, 18 in 1000 men, and in the south 49 in 1000.

During this same period, the following table shows the diseases for which the men were admitted into hospital, and also the number of deaths caused by these diseases:—

DISEASES.	NORTHERN DIVISION.		SOUTHERN DIVISION.	
	Admissions to hospitals.	Deaths.	Admissions to hospitals.	Deaths.
Intermittent fevers	3187	1	14,094	13
Remittent	587	12	4,196	145
Synocha	825	2	718	11
Typhus	54	8	110	24
Catarrh	9,538	1	7,471	4
Pneumonia	610	8	900	42
Pleurisy	652	1	1,060	6
Phthisis	152	46	257	116
Hæmoptysis	83	1	84	2
Dysentery	—	4	—	38
Diarrhœa	5,981	5	13,135	55
Gastro-enteritis	289	1	633	26
Colic and cholera	3,221	2	3,282	7
Epidemic cholera	302	103	384	88
Hepatitis	98	3	166	4
Meningitis	18	3	31	5
Apoplexy	6	4	25	10
Epilepsy	166	5	188	9
Delirium tremens	102	3	306	39
Drunkenness	1,370	5	2,616	58
Nyctalopy	18	—	791	—
Rheumatism	3,412	—	2,845	1
Gonorrhœa	971	—	929	—
Syphilis	462	1	584	—
Dropsy	50	4	206	19
Atrophy and chronic visceral lesions ...	—	9	—	16
Accidents	—	35	—	50
Sudden deaths	—	3	—	7
Other diseases	—	11	—	28
Total	32,154	281	54,411	823

It will be seen, from the above table, that most of the additional diseases of the South are due to those connected with the climate.

Intermittent and remittent fevers, diarrhœa, and cholera, all show a marked preponderance in the South.

In a recent number of *The Radical*,* we hear a cry from New England on the score of health. New England, says *The Radical*, is "notoriously and needlessly unhealthy. Take almost any parish you please, and you will find a quarter of it, more or less, permanent invalids, and more than half with some trouble of body. In stomach diseases it is notorious that we beat the world. France, England, Germany, our rivals in many other things, both virtues and vices, cannot rival us in dyspepsia. It makes our bad pre-eminence: the stomach is our devil." But what is the cause of this terrible fact? The writer answers food. Not that this is the entire explanation; but it is, he says, at least the great one. "Now, a great many," continues the writer, "are ready to assign other causes. They say our dry climate, our nervous life, the rapid changes from class to class, account for the fact. But hardly. Sweden has an exciting climate, but not our sickness; France leads an excitable life, but is not an invalid; England does the hard work that we do, is as busy with business, but John Bull is calm and fat; Germany is as busy with her brain, but the German student is strong. There must, therefore, be some especial reason, and we have given it—food." But the writer might have added that John Bull equals him, and excels him, in food; this reason, therefore, does not satisfactorily answer for a phenomenon which, in the writer's words, "shows itself in a community whereof half are diseased." But, further, such reasons as assigned above are totally irrelevant. Sweden has certainly an exciting climate; France leads an excitable life; John Bull works hard. But John Bull cannot with impunity work as hard in foreign climes; the French are lively in their native land only; Sweden contains inhabitants who are in every way suited to the surrounding media; but the Yankees are invaders, who conquered, and have driven before them, the autochthones of the land they inhabit.

But to return. It has been urged against the degeneracy of the Americans, that they produce more tall men than do the European nations. There can be no doubt of the fact; but is not the excessive development of the osseous system one of the chief traits of degeneracy noticed by writers on this subject? Dr. Hammond† undertakes to show that in the United States army there are a very considerable number of tall soldiers more than in either the English or French armies. The following table is given to show the comparative height of British and French soldiers in proportion to a thousand. It must

* Reprinted in *The Dietetic Reformer*, July 1869.

† *A Treatise on Hygiene*. Philadelphia: 1863.

be recollected that the British Army Regulations exclude from the service all persons under 5 feet 5 inches, which accounts for the absence of soldiers under that stature.

HEIGHT.	BRITISH.	FRENCH.
5 ft. 1 in.....	—	62
5 2	—	156
5 3	—	187
5 4	—	178
5 5	4	152
5 6	114	107
5 7	180	69
5 8	252	49
5 9	184	22
5 10	128	9
5 11	73	5
6 0	40	2
6 1	15	1
6 2	7	—
6 3	1	—
6 4	1	1
6 5	1	—

Compared with the above table, Dr. Hammond prepares the following, which shows the great height of the American soldiers. It is calculated on 1,800 men—100 from each state—taken in the order that they are entered in the Adjutant-General's office.

STATE.	Mean height.	Six feet and over.	Greatest height.
			Ft. In.
Indiana.....	5·7604	18	6 4 $\frac{1}{2}$
Kentucky.....	5·7729	18	6 3 $\frac{3}{4}$
Ohio	5·7537	15	6 3 $\frac{1}{2}$
Tennessee.....	5·7779	18	6 3
Maine	5·7314	11	6 2
Vermont and New Hampshire	5·6951	6	6 1
Massachusetts and Connecticut.....	5·6821	5	6 3
North Carolina	5·7814	24	6 3 $\frac{3}{4}$
Georgia.....	5·8272	30	6 6 $\frac{1}{2}$
South Carolina	5·7729	15	6 4 $\frac{1}{2}$
Alabama	5·7647	17	6 4
Virginia	5·7488	15	6 2
New York.....	5·6505	4	6 1 $\frac{1}{2}$
Pennsylvania	5·6756	5	6 1
New Jersey and Delaware	5·6509	6	6 1
Maryland.....	5·7130	9	6 2
Illinois	5·7696	17	6 3
Missouri	5·7162	8	6 1 $\frac{1}{2}$

“The great stature of the American when compared with that of the English and French soldiers,” says Dr. Hammond, “is made suffi-

ciently apparent from the foregoing tables. Of one thousand men in the British army, there were but sixty-five of six feet and over, and in the French army but four ; while of eighteen hundred recruits for the United States army, two hundred and forty-one were six feet and over in height, or somewhat more than one hundred and thirty-three per one thousand." Indeed, I may add, no more conclusive proof could be wanted. Dr. Hammond continues : " No one who has seen the French army can have failed to notice the low stature of the men who compose it. But, at the same time," he adds, " he will, doubtless, have remarked the fact that nearly all of them are well proportioned, stout, and hardy-looking fellows." Can the same be said of the Americans? We fear not. In fact, Dr. Hammond himself is obliged to admit, further on, that : " For corresponding heights, American soldiers are not so heavy as those of European armies. The former do not grow laterally to the same extent as the last mentioned, and hence their deficiency in weight. This is the greatest defect in the physical constitution of our troops."

Professor Desor says : " Another chief characteristic of the American is the length of the neck ; not that it is absolutely longer than amongst us, but appears longer on account of leanness. The Americans, again, recognise the European by the opposite characters. ' He is a stranger, look at his neck, an American has no such neck.' The physical difference between the American and European is not only manifest in the muscular system, but also in the glandular system, which especially deserves the attention of the physiologist, since it concerns the future of the American race. The most intelligent Americans clearly perceive that the increasing delicacy of form (specially in the women) ought, if possible, to be arrested. Despite their instinctive aversion against the Irish (forming the largest contingent of immigrants), they are aware that this momentous question requires more than a passing notice. The paleness, delicacy—I think we may say *degeneracy*—of the American females, seem to be admitted on all sides. What does Mr. Hepworth Dixon say? He was asked, he tells us, by a bluff Yankee, in the Saratoga, ' What do you say now, to our ladies? ' Charming,' of course he answered ' pale, delicate, bewitching.' ' Hoo!' cried he, putting up his hands, ' they are just not worth a d—. ' They have no bone, no fibre, no juice ; they have only nerves. Such things are not fit to live, and, thank God, in a hundred years not one of their descendants will be left alive."

" When looking," says Mr. Dixon himself, " at these sweet New England girls, as they go trooping past my window, I cannot help feeling that with this delicate pallor, winsome and poetic as it looks to

* *New America*, vol. ii, p. 32, et seq.

an artist in female beauty, there must be lack of vital power. My saucy friend had got some inkling of truth. Would that our dainty cousins were a trifle more robust! I could forgive them for a little rose blush on the cheek; at present, you can hardly speak to them without fearing least they should vanish from before your face!"

One of the latest English writers on America, Sir Charles Wentworth Dilke, will not admit that the Americans are "dying." "While the Celtic men," he says, "are pouring into New York and Boston, the New Englanders and New Yorkers, too, are moving. They are not dying. Facts are opposed to this *portentous theory*. They are going west."* If the author means by "this portentous theory," the theory of the non-cosmopolitanism of man, he is greatly mistaken. Who could wish for a more telling fact than the following from the author's own pen? Speaking of the now universally admitted aversion to healthy exercise among the Americans, he says: "Rowing and other athletics, with the exceptions of skating and base-ball, are both neglected and despised in America. When the smallest sign of a reaction appears in the New England colleges, there comes at once a cry from Boston that brains are being postponed to brawn. If New Englanders would look about them, they would see that *their climate has of itself developed brains at the expense of brawn, and that, if national degeneracy is to be long prevented, brawn must in some way be fostered*. The high shoulder, head voice, and pallor of the Boston men are not incompatible with the possession of the most powerful brain, the keenest wit; *but it is not probable that energy and talent will be continued in future generations springing from the worn out men and women of to-day*."

"The prospect at present is not bright; *year by year Americans grow thinner, lighter and shorter-lived*. Ælian's Americans, we may remember, though they were greatly superior to the Greeks in stature, were inferior to them in length of life. The women show even *greater signs of weakness than the men*."† I have italicised the above passages as they bear directly and immediately on the great question whether facts do or do not support the "portentous theory."

In a discussion before the Anthropological Society of Paris,‡ M. Rameau expressed his opinion that there are certain general features which constitute an ensemble of modifications and transformations which the European race undergoes in America. Such are, an elongation of the osseous system, a shrinking of the glandular system. The skin becomes dark and dry, the hair becomes black, thick and flat like that of the Indians. This agrees with an assertion of M. Desor:

* *Greater Britain*, vol. i, p. 55.

† *Loc. cit.*, p. 53.

‡ *Bulletins of the Society*, vol. vi, p. 137.

“What still more characterises the North American is his stiff lank hair. There is a striking contrast in this respect between the Englishman and the American. We look in vain among American children, despite all the care taken by their mothers, for curly-headed children so frequently seen in England. This influence on the hair is probably owing to the dryness of the climate. Hair, as is well known, curls when moist; we are, therefore, not surprised that in England the hair is inclined to curl; whilst it remains lank in America. The hair of the European becomes in America dry, and requires pomatum, etc., to keep it glossy and soft.”

These celebrated authors are not alone in their assertions—not mere isolated examples.

M. Pruner Bey* also says: “Already, after the second generation, the Yankee presents features of the Indian type. At a later period, the glandular system is reduced to the minimum of its normal development. The skin becomes dry like leather, the colour of the cheeks is lost and is in males replaced by a loamy tint, and in females by a sallow paleness. The head becomes smaller and rounder, and is covered with stiff dark hair; the neck becomes longer, and there is a great development of the cheek bones and masseters. The temporal fossæ becomes deeper, the jaw-bones more massive, the eyes lie in deep approximated sockets. The iris is dark, the glance is piercing and wild. The long bones, especially in the superior extremities, are lengthened, so that the gloves manufactured in England and France for the American market are of a particular make with very long fingers. The female pelvis approaches that of the male.” It is but fair to add that Professor Vogt adds to the above extract: “that the head becomes smaller, we utterly deny; the exact cranial measurements by Morton contradicts this assertion categorically, by showing that the skull of the Yankee is as large as that of the Englishman.” But Professor Vogt also says that with the rest of M. Pruner Bey’s assertions he entirely agrees. “We also believe,” he adds, “that America dries up the skin and reduces the fat, an effect to which all the above differences might be reduced.” But an influence which modifies the American’s hair, eyes, fat, etc., may very reasonably be supposed to influence the size, or at least the quality, of the brain. Fat, as is well known, forms a very essential quantity of the brain; are we then to say that the fat of the brain forms the only exception to the above-mentioned climatic and allied influences? Perhaps the time is not yet come for determining the intellectual qualities of races by the examination of the brain only; but when it does come, we may be able to determine the exact influence the climate

* Carl Vogt, *Lectures on Man*, p. 432.

of America has on the Yankee's brain, and consequently on his intellectual character. We know, however, that there is already a peculiar peevishness in the American character; that children born in America are unusually precocious in their intellectual development; that there is an endless bustle and haste in American cities which indicates some abnormal influence at work.

Waitz* subscribes fully to the opinion of those authors who recognise the deteriorating effects of climate on the Americans. "It has long been observed," he says, "that the English immigrants in North America are more vigorous than their descendants . . ." The leanness, the stiff shaggy hair, the long neck, the weaker development of the glandular system, the nervous irritation; all these peculiarities he has noticed, and adds that they may be due to "the dry west winds which predominate in the United States."

Among the other authors who incline to this opinion may be mentioned Klöden,† who says, "it is even yet not settled whether the whites could perpetuate themselves in North America were it not for the constant immigration of European settlers." Several authors, especially those supporting monogenistic opinions, endeavour to establish that the Anglo-American would, if left alone, not be driven out of the land by the force of natural conditions, but would be turned into nothing more nor less than an American Indian, that is, a red skin. Among these authors the foremost is the Rev. S. Stanhope Smith, who wrote on the subject at the end of the last, and at the beginning of the present century.‡ After enumerating several instances of the alteration of complexion and figure, and other signs which have been fully verified by later authors, he is of opinion that if they were left to a state of absolute savagism they would become Indians. His remarks are instructive, as showing that even as early as 1787, when his essay was first published, the Americans were beginning to experience a deep change in their constitution and appearance. The conclusion, however, that the ultimate point, to which these alterations tend, is the physiognomy of the Indian, is no doubt greatly exaggerated, and in fact is an altogether mistaken idea.

It did not, however, die with Dr. Smith. Other authors have noticed a similar metamorphosis. Finally this opinion has been lately expressed by M. Elisée Reclus,§ who thinks that not only

* *Introduction to Anthropology.*

† *Races of Mankind.*

‡ *On the Variety of Complexion and Figure in the Human Species*, p. 67, et seq. New Brunswick: 1860.

§ "Le Mississipi, le Delta, et la Nouvelle Orléans." *Revue des Deux Mondes*, August 15, 1859.

Europeans, but also the negroes, are becoming more and more like the native Indians. "To a stranger," he says, "who arrives in Louisiana, it seems that the complexion of the white as well as that of the black, gradually approach that of the red skins. If other influences did not counterbalance those of climate, it might well happen that in the lapse of centuries the Americans will, without exception, assume the colour of the aborigines, whether their ancestors came originally from Ireland, France, or Congo."

These are, of course, extreme opinions, and I merely quote them to show that the influence of climate on European emigrants is much more serious than is generally imagined. It is as useless to talk of turning the negro or white into a red man by this influence of climate or anything else, as it is to expect to transform a pear tree into an apple tree by changing its soil. If the latter was unfavourable, there can be no doubt the tree would perish. But what can we assert with regard to the former case? Are we to say that the ultimate fate of the present race of settlers in the United States must be that of the pear tree? This cannot be fully answered at present, but from the facts and observations produced above, I think I am warranted in arriving at the following conclusions.

1. That however defective the American statistics may be, there seems to be no doubt that from 1810 to 1850 there has been a decrease of ten per cent. in the reproduction of the race of primitive settlers; and that the census of 1860 is evidently defective in this respect; due regard not having been paid to the arrival of immigrants.

2. That the statistics of population in Massachusetts show that were it not for the increase of the foreign population the number of inhabitants must rapidly decrease; the deaths of the native-born being in excess of their births.

3. That this conclusion is strongly supported by the fact that the average number of children to one family, has descended from eight or ten among the primitive settlers, to less than three at the present time.

4. That it results from this that the primitive settlers are in fact dying out and are being replaced by foreign immigrants in this state.

5. That we have to learn whether this will be the case with the recently formed Western States, but there is no reason to think that the ultimate results will be different. The oldest states show the lowest birth-rate. This proves that the climate has begun to make itself felt, whilst in the new states on the contrary it has not had time to operate.

6. That there is a great difference between the northern and southern states in respect to health, which is fully proved by the testimony of authors as well as by the Army statistics.

7. That there is some mysterious difference between the English and American women. They either will not or cannot possess themselves of numerous families such as are noticed on all sides in England.

8. That this dislike for, or inability to possess themselves of large families cannot, in the presence of undoubted facts of physical degeneracy, be attributed solely or principally to the crime of abortion, or to the voluntary limitation of families.

9. That the imputed physical alteration, or degeneracy of the Anglo-American is fully proved to include the following points: precocity as children; early arrival at puberty and old age; increase of stature; absence of corpulence; thinness of neck; want of development of glandular system, especially in women, who also cease child-bearing while still young. In addition to the above, there is some yet unknown alteration in the brain, which produces peevishness, abnormal bustle and mental activity.

It has been well said, that the laws of the present are also the laws of the past and future. The facts before us, cannot be said to form an absolute and unassailable theory. They, in fact, do little more than indicate to us coming dangers. These indications seem to offer a most unpleasant prospect to the present inhabitants of the United States. Well may Sir Charles Wentworth Dilke say the prospect at present is "not bright," when "year by year the Americans grow thinner, lighter and shorter-lived." Well may the American journals after considering the facts before them ask, "Is the old Puritan stock dying out?" To all such facts and opinions as those I have quoted, there comes one stereotyped answer, that the cause of the physical degeneracy observed in Anglo-Americans is the mode of life or social customs. I for one cannot accept such an hypothesis. I think it more consonant with facts to conclude that the changes—call them degeneracy or development, which you will—observed in the Yankees are the result of altered cosmical conditions to which mode of life and social conditions are purely secondary. I think, too, that the facts I have produced tend to establish what the Member for Chelsea truly calls the "portentous theory," and that the history of colonisation in the North American Republic lends no support to the asserted cosmopolitanism of man, and especially to that most vain portion of humanity who calls himself Anglo-Saxon; who promulgates his so-called "civilisation" by fire and sword, and exterminates the savages of the region he invades.

The Yankees have conquered the natives, but they are beginning to find out that it is out of their power to conquer the conditions imposed by nature on the land of which they have taken possession. If they can succeed in doing this they will prosper, but until then they and

their descendants must expect to pay such penalties as those which they are now suffering. The problem before them is the same as that which puzzled Alexander the Great. "What shall I do?" he asked of Aristotle one day, "what shall I do to rid myself of those barbarous neighbours of mine?" "Alter their climate," said the philosopher; "if you can succeed you will soften their manners, but if you can't, you had better exterminate them."

Anthropological science cannot consent to consult the wishes or the prejudice of the subjects with which it has to deal. Whilst, therefore, fully admitting the powers of civilised men to struggle for a time against the decrees of nature, we must yet venture to point out even to the boastful Anglo-Saxon, that the world is not for him; and that although his skill in war and chicanery may exterminate native races, it will yet be demonstrated that in the New World the almost exterminated savages will be amply revenged by a slow, gradual degeneracy, and perhaps final extinction, of their conquerors.

THE ISLE OF AXHOLME.

BY EDWARD PEACOCK, Esq., F.S.A., F.A.S.L.

It is said that at a recent examination of candidates for the civil service, no one could answer the following question, "Where is the Isle of Axholme?" Perhaps, if the same inquiry were made in any large concourse of men, from whatever class they might be taken, a considerable majority would be found as ignorant as the crammers had left the poor youths who were on that occasion under torture. It is not the fault of book-makers, however, if the Isle of Axholme—*The Isle*, as its inhabitants proudly call it—is an obscure place. Three big volumes, two quartos and a royal octavo, have been published concerning it within the last sixty years. For all purposes in which we are interested—for every purpose, indeed, except a very doubtful commercial one—we may dismiss the compilations of Stonehouse and Read to the darkness of the great libraries. The *Topographical Account of the Isle of Axholme*, by William Peck, from which the two other authors took almost everything that is useful in their books, is a trustworthy, and in a certain sense interesting, publication. Its author, a zealous collector of facts, had, however, unfortunately, but little of literary art, and was without the advantages of a liberal education. He wrote, moreover, upwards of half a century ago, when

the means of attaining information were scanty, and when the relative value of various classes of knowledge, was but dimly understood.

Axholme, or Axelholme—the island in the water, or, perhaps, the island of the oaks—is, or rather was ere the improvements of man interfered with the configuration of the country, an island cut off from Yorkshire, Nottinghamshire, and parts of Lincolnshire, by the rivers Idle, Don, and Trent. The island proper consists of a plateau of slight elevation, on which are situated Belton, Crowle, Epworth, Haxey, and Owston, five out of the seven old parishes into which the district was divided, and a fringe of rich alluvial soil on the west bank of the Trent, where the memory of two other ancient settlements is preserved in Luddington and Althorpe. It is not usual to call a place an island merely because surrounded by rivers. Where such a designation has been applied, we are justified in concluding that the rivers have at some previous time spread out into lakes. This was certainly the case here. At the earliest time, indeed, with which we are acquainted, though here chronology, as counted by years, fails us, the whole of the district was clad with a forest of oak, fir, yew, and hazel. When or by what means it perished, we have no evidence derived from human testimony. As, however, the roots of much of it are now below the high-water of the tidal rivers adjoining, there seems little doubt that a subsidence of the whole district is the true explanation. Evidences of a similar settlement have been observed at many points on the present coast-line, from the mouth of the Thames as far north as Flamborough Head. At what time the woods perished and the marsh succeeded we can but dimly guess. No certain traces of man have been found in connection with the trees, in such a manner as to make it quite certain that any of our race ever wandered in its glades. But the evidence gathered from the discovery of weapons of wrought stag's-horn, flint, and bronze, beads of earthenware and jet, are sufficient to make out a very strong case of probability. That the woods had given place to the waters before the period when the Roman ways were laid out is almost certain. No trace of one can, as far as I have ascertained, be found within the district; and yet it is certain that, if a road could have been made, one would have been forced across the isle for the purpose of connecting Danum (Doncaster) with the Lincolnshire stations. The few Roman coins that have turned up there, and they are very few, may possibly have been brought in more recent times, perhaps as talismans; for the power of the "great mistress of heathendom" so far possessed the simple minds of our Christian forefathers as to make them believe in the magical power of such like relics, or they may have been really current coin in circulation long after the political power of the empire had ceased in Britain.

When the darkness clears away after the departure of the Roman legionaries, and we find Eastern England broken up into Teutonic kingdoms, the Isle of Axholme first becomes visible: not through the light of written records, however, as yet, but through the names of places which a German-speaking people first planted on her soil. The names of the seven parishes of the island—Althorpe, Belton, Epworth, Haxey, Luddington, Owston, and Crowle—are all certainly of Teutonic structure, except the last, which is of uncertain origin, and of which, in consequence, various absurd derivations have been given. Stonehouse derives it from the Dutch *kroll*, which, he tells us, means a “shed or small habitation” (p. 399). If the good man had not quoted Domesday—of course, in Bawdwen’s translation—one might have imagined that he thought the name had been taken from the cattle-pens of the Dutch settlers in the seventeenth century. Where all is guess work, it would be hard if I suppressed the derivation given me by an isle freeholder, when I asked him what the name meant. “Why, sir,” said he, “you see, before the drainers came, we were nearly drowned (*sic*) by water, and so crowled* upon the hill, and so the place got called Crowle.” The hamlets, as Butterwick, Derrythorp, Keadby (pronounced Kidby), Gunthorpe, are all Teutonic names. We may, therefore, assume that, although there are evident traces of a Celtic people having once wandered over the district, they had few permanent settlements, or that if they had they were swept away by the Low-German settlers. When the Saxon settlements were made here, the country must have been very much the same as it continued until the reign of Charles I. A long irregularly-shaped island, in the midst of a mere, with a fringe of villages on the Trent bank, connected with the upland in some few places by raised causeways; the others communicating only by the use of boats. The communication with the Yorkshire side was even less easy on the west: a wide extended marsh-land had to be crossed, which was frequently too shallow for boats, and too much of a morass for people on foot or on horseback. There seems, however, evidence that at this period, or at least in the middle ages, a road existed across the isle, connecting the upland towns of Lincolnshire with Doncaster. Of course, it could only be used in dry weather. Glanford Bridge, now Brigg, on the River Ancholme, was the point where persons from the wolds of Lincolnshire crossed that stream to gain access to the wapontakes between that river and the Trent; and from this place an old road may be traced to the Trent bank at East Butterwick, where a ferry has existed from a remote period. When the traveller gained the Isle of Axholme at West Butterwick, he seems to have gone on

* To crowle is to creep, in the Lincolnshire vernacular.

a raised pathway, on the line of the present road, to Sandloft, where it abruptly ended, and he had to make his way over the bog by the help of a boat, or, if it were a very favourable season, it may be by a roundabout way on foot. No horse, even in the dryest seasons, could have found footing on the treacherous soil.

The manorial and ecclesiastical history of the isle is not within my present province. If it were, bound up as it is with the fate of the Dalbinis, Mowbrays, and Sheffields, no want of power on my part could make it entirely uninteresting. The records, however, which relate to it, numerous as they are, are yet mostly locked in manuscript; and, until some competent antiquary shall be possessed with sufficient self-sacrificing zeal to go through them and give the world the result of his labours, no history can be written, even in the most sketchy and superficial manner, that can have any claim to trustworthiness. The names of the people, as far as they can be gathered from mediæval charters and the other shreds that have come down to us, show a population almost entirely cut off from the outer world. Hardly any topographical names became patronymics in the district, except those taken from villages in the isle itself or those just on the borders. The Fearnese and the Maws—the latter probably a Norfolk or Suffolk family—seem to be the only evident importations, and they were not here, as far as can be proved, before the early part of the sixteenth century. At the present time, Mawe is one of the commonest names in the neighbourhood. The Fearnese have long been extinct.

The quiet of a thousand years was rudely broken by Charles the First. Before he ascended the throne, the place must have been familiar to him. The kings of England had a hunting lodge at Hatfield, near its western border, where many of the latter Plantagenets had diverted themselves with the sports of the chase. Queen Philippa, spouse of Edward the Third, was confined here of her second son William, who died a baby, and found sepulture in York Minster.* Here, too, was born on the 10th of February, 1441, Henry, the eldest son of Richard Duke of York.† I am not sure, however,

* Thoresby, *Ducatus Leodiniensis*, p. 15. Hatfield in Hertfordshire has sometimes been assumed to have had this honour. There is no doubt that it is due to the Yorkshire town.

† Wil. Wyrcester, *Annales Rerum Anglicarum* in Hearne's *Liber Niger Scaccarii*, ii, 461. The chronicler records in the following year another claim that this famous hunting seat has on our memories. It probably did not occur to the simple minded annalist that this form of entry would be considered anything unusual. It was called for by the fact that charges of unchaste living had been wantonly brought against the noble lady. (*Cf. Rotuli Parliamentorum*, vi, 194.) "1442. Natus est Edwardus, filius secundus

that we have any record of Charles having chased the "tall deer" within the Isle. His elder brother, Prince Henry, once enjoyed this pastime under circumstances of a highly picturesque character. It seems that once, when he was staying at Hatfield, he paid a visit to Sir Robert Swyft of Streethorpe, here he fell in with one of the Portingtons, influential people in this region, who promised the Prince that if he and his retinue would go with him they should see such sport as they had never before witnessed. The Prince accepted the invitation, and he, the royal suite, Portington, and his following, embarked in upwards of a hundred boats. The beaters frightened some five hundred deer out of the adjoining woods, which all took to the water. The royal fleet at once gave chase. It is said they came up with them just over the Yorkshire border, at a place called Thorne Meer, "and there being up to their very necks in water, their horned heads raised seemed to represent a little wood and here being encompassed about with the little fleet, some ventured amongst them, and feeling such and such that were fattest, they either immediately cut their throats and threw them up into the boats, or else tying a strong, long, rope to their heads, drew them to land and killed them."* We have here an instance of a mode of taking wild animals which would, no doubt, be very new to the Prince and his courtiers, accustomed only to follow the sports of "venerie," according to the rules laid down by those who had made one of the earliest habits of man into a complex and half chivalrous art; we may well believe, however, that it was a practice nothing new to the Yorkshire and Lincolnshire fen dwellers. It has sometimes been asked, how the men who lived in the lake dwellings of a far earlier time captured the wild animals on whose flesh they fed. Their rude weapons seem ill adapted for the slaughter of any beast as wary or as fleet of foot as the stag. May we not suppose, without any violent improbability, that this sport, witnessed perhaps almost for the last time by Prince Henry, was an old method of chase which had been handed down from a far-off time, when some such course was the only means by which the deer could be captured with certainty.

The accession of Charles the First has been called the great turning point in our modern history. The year 1627—two years later—may be said to have been the most memorable of all years in the annals of the Isle of Axholme. The King was not only Lord of the whole Isle, but of Hatfield, and many neighbouring manors. The demesne lands

Riccardi Ducis Eboraci, et heres, Rex Angliæ et Franciæ, xxviii die Aprilis, hora ii post mediam noctem in mane diei Lunæ, apud Rothomagum [Rouen] qui conceptus est in camera proxima capellæ palatii de Hatfelde." (P. 462.)

* De la Pryme, as quoted in Hunter's *South Yorks.*, i, 186.

of which consisted of upwards of seventy thousand acres of "overflowed wastes." In this year, the King contracted with Sir Cornelius Vermuyden to reclaim all this profitless expanse of mere, and to reduce the same into a fit state for pasture or tillage. Vermuyden was a Zealander,* an engineer of some note in his own country, and a man who was, as far as we can judge of him by the few and slight memorials that have come down to us, well adapted to carry out a work which would present considerable difficulties even to a person who had had the advantages of modern scientific training. He was born and had spent his early life in a country not unlike the Isle of Axholme, and had witnessed and taken part in some of those engineering triumphs which had made his native land one of the most fruitful countries of Europe. Vermuyden was to be rewarded with a third of the reclaimed soil; he at once began his work in good earnest, and invited over numerous Flemings and Dutchmen to help him in his great undertaking. So pleased was the king, or his advisers, with the great work that was going on, that, in 1629, his majesty sold a considerable portion of his own part of the drained and drainable property to Sir Cornelius for what seems a very small sum, even when we allow for the change in the value of money. This purchase was, however, the beginning of a very serious trouble. The commonholders of Epworth claimed rights of pasture, fishing, fowling, etc., over 13,400 acres of this land, under a charter of John de Mowbray, dated 31st May, 1359. These persons, conceiving that they had not had proper compensation given to them for the privileges they had forfeited, began at once to shew a very turbulent spirit. At first they were content to proceed according to law, and many and wearisome are the records which yet exist relative to this intricate business. For some years the new settlers cultivated their lands in peace. They probably would have continued to do so had not the civil war given an occasion to every ill disposed person who had, or thought he had, a ground of offence, a means of having recourse to violence. In 1642,

* Son of Giles Vermuyden by his wife Sarah, daughter of Cornelius Worderdyke. His parents dwelt at St. Martin's Dyke, in the Isle of Tholen, near the mouth of the Scheldt. He entered his pedigree in the Heralds' Visitation of London, 1633. He married Catherine, daughter of All-Saints Lapps of London—no doubt, a Dutch or Flemish lady—and had numerous issue. Of the time or circumstances of his death, nothing seems known. One traditional account, almost certainly false, is that he finished his earthly career "in the poor-house at Belton"; another, which comes on equally questionable authority, is that he "died miserably poor in the south." There is but too much reason to fear that his latter years were darkened by poverty." (Hunter, *South Yorks.*, i, 169.)

the people of Epworth and Misterton* thought it was a convenient time to pay back their old grudge, and revenge the foreigners' victory in the law courts by force of arms. When harvest was nearly ripe, they gathered themselves together in a tumultuous mob and destroyed the houses and growing crops on the low lands to the value of upwards of twenty thousand pounds; not content with reeking their fury on the new comers, every sign of authority seemed odious to them. They defaced Epworth church, tore up the ten commandments, and buried filthy carrion under the communion table. And, not satiated with this, a furious rabble tore up the gates of Snow Sewer, where the water from a great part of the newly drained land flowed into the Trent, and thus endeavoured to reduce the country to its old state of unprofitableness. Some quaint stories are told of the way in which the mob shewed its hate to the new-comers. When Snow Sewer was destroyed, it is reported that they erected stakes in the form of a gallows to show, by an easily understood symbol, what would be the fate of its restorers. Several of the settlers and their workpeople were thrown into the water and held under with long poles until they were almost drowned, and one unfortunate Dutchman is said to have been set floating on the river Trent, when the tide was ebbing seaward, among the branches of an uprooted elder-tree, with instructions to "go back to Dutchland." The poor man is reported to have escaped the perils of so long a voyage by being stranded on the opposite bank, where men's minds were not so passionately inflamed. He was, therefore, protected and kindly treated.

Things remained in this state for some years; at length, in 1645, the Parliament took what seemed forcible steps to put an end to this lawlessness and to preserve the remains of the property of the settlers. Fighting of a desultory kind, however, was kept up until 1650, when another violent riot occurred, in which the Flemish Chapel at Sandtoft was sacked and eighty-two houses of the settlers destroyed. For ten days the Islemen were in open and avowed rebellion. Colonel Wildman and the notorious John Lilburne were their leaders on this occasion. Lilburne's language was, as usual, grotesquely violent; he called the Parliament "a Parliament of clouts," said he "could make a better Parliament himself, and would when he went to London," and used various other highly offensive expressions. It was not until late in the reign of Charles the Second that these violent outbreaks were finally suppressed.

Had the settlement been permitted to go in peace, there can be little doubt that one half of the district would have been peopled by

* Misterton is not in the Isle of Axholme. It lies across the Nottinghamshire border, but was included in Vermuyden's drainage scheme.

persons of Dutch and Flemish blood. The constant state of alarm in which the earlier settlers lived hindered fresh supplies coming in from abroad, so that the infusion of foreign blood has not been so great as might have been looked for. The foreigners had a church or chapel at Sandtoft, and the register of this place from 1641 to 1681 was seen by Mr. Hunter, the learned historian of South Yorkshire. It has now strangely disappeared. If this record should ever be discovered, it would no doubt furnish us with nearly a complete list of the foreign families, and, possibly, in some cases might give indications as to what part of the Continental Low Countries was their native home.

One of their account books, now in my possession, gives a list of the landowners in 1635, but this goes but a small way to forming a complete list of those who came over, as the servants and workpeople would be far greater than those who could afford to settle as farmers. No attempt has been made to estimate their numbers. They must have been far more numerous than is commonly thought. If it had not been so, during the stormy times of our great civil war they would not have been enabled to keep up what was little short of a continuous warfare with the old inhabitants. Many of the old names yet exist in the Isle or the immediate neighbourhood, shewing unmistakably, by their foreign sound, that their owners are sprung from Dutch or Flemish settlers; but the strongest evidence we have is the present appearance of the people. If the whole history of these transactions were lost, that alone would shew that the present Isle-men had inherited other blood than their neighbours east of Trent. Their build is decidedly larger, their under-jaw more massive, hair lighter, feet and hands proportionately larger. There is a greater proportion of blue eyes, and it is said (but on this I have no means of judging) that the teeth have a much slighter tendency to decay. They have not preserved, as far as is known, a single word of their old language in their present folk speech, but the accent of their dialect has a distinct resemblance to the modern Flemish, and is, on that account, very distinct from that of Yorkshire, Nottinghamshire, or the other parts of the county of Lincoln. The women work constantly in the fields, in a manner familiar to everyone who has crossed the Channel, but strange to those whose experiences are only insular.

Nearly the whole of the land in the Isle of Axholme is in the hands of small freeholders, and, as a consequence, the people are industrious and frugal in no ordinary degree.

THE THEORY OF THE ARTS.*

THIS is an elaborate and painstaking treatise. Mr. Harris has brought to his task great research, close observation, profound and matured thought, knowledge, taste, and feeling for the beauties of nature and art. The whole work, of over 600 pages 8vo., is pre-eminently characterised by one quality, that of *reverence*. We specially notice this, as we are convinced that, without *reverence*, it is impossible even to understand, far less to achieve, anything great either in art or science. To give a thorough analysis of this work would require several notices. We must endeavour to convey a general idea of its contents, by glancing at the points which struck us as most salient, during our perusal. *In limine*, we entirely agree with the remarks in Chapter I, Section 9, on The Religious Influences and Application of Art. Mr. Harris thinks "we greatly err in not employing pictorial composition for this the highest purpose for which it could be used," and refutes most successfully the religious objections, based not on the *use*, but the *abuse* of the arts. He observes (page 26) on the ludicrous inconsistency of certain zealous protestants in their determination to exclude Papal ornaments from our churches: "All scriptural paintings, even those calculated to excite the most devotional feelings, are utterly forbidden to enter, while sculptured monuments of the most heathenish and irreverent character, in many cases erected to memorialise persons of immoral and irreligious lives, are admitted without scruple and without restraint. In our abhorrence of Popery, we have sought refuge in Paganism. The church has been converted into a Pantheon; tombs are placed there to record the bad acts of bad men, to the exclusion of all representations of the actions of Him, to whom the temple is devoted. Painting suspected to be Popish is rigidly excluded, only to afford room for sculpture undeniably Pagan."

It is, doubtless, owing to the prejudice against pictures as savouring of Popery, that there should be such a marked contrast between Catholic and Protestant churches, as regards paintings. We know no reason to be urged against pictures in a church, which would not prove equally valid against the sister arts of sculpture, archi-

* *The Theory of the Arts; or, Art in Relation to Nature, Civilisation, and Man. Comprising an Investigation, Analytical, and Critical, into the Origin, Rise, Province, Principles, and Application of each of the Arts.* By George Harris, F.S.A., of the Middle Temple, Barrister-at-law; author of *Civilisation considered as a Science*. 2 vols. Trübner and Co. 1869.

texture, and music, vocal and instrumental. We make a compromise as to painted windows. But if paintings on glass are consistent with devotion and the purity of our reformed worship, why should not paintings on canvas be admissible?

Our author traces the origin in the mind of every species of art, of which he enumerates nine forms: Painting, Sculpture, Poetry, Eloquence, Music, Architecture, Dramatic Acting, Costume, and Gardening. The germ of all these exists, active or passive, more or less, in every human mind. Indeed, were it otherwise, the productions of art could not meet with sympathy and appreciation from mankind at large. With the great majority, these artistic powers are wholly *passive*, in many doubtless, completely latent, or so slightly developed, as to be practically inappreciable; but still susceptible of growth and education. With the comparatively few, they are *active*, and are evinced in the production, or appreciation of works of art. Man has a natural propensity to imitate. He is not only fond of the art of imitating, but is pleased with successful efforts of this nature. Our author observes that, "although animals as well as man derive pleasure from imitation, yet they never appear to experience any gratification from works produced by this effect, which is a purely intellectual operation." There are, however, authentic instances of animals being deceived by pictures. Humboldt relates a curious instance of a monkey, who recognised engravings of insects and reptiles, and tried to seize the supposed animals; and what makes the fact still more extraordinary, is that the engravings were not coloured! There is, however, a faculty beyond imitation, and far more exalted—that of *origination* or *invention*, or as it is sometimes called *creation*, and our author finely says: "Surely, if the creative power of man is that which causes him most to resemble God, of all his pursuits that of art must be considered as the most divine." (Chapter II, Section 7, p. 60.)

One great advantage of the study of painting and sculpture is, that they lead to a real taste for nature, and an admiration of her fairest scenes. When we consider how evidently adapted the beauties of this visible world are to man's faculties, the mind is profoundly impressed with a sense of *reverence* and *gratitude*, and we are led from the contemplation of nature up to nature's God. Chapter III deals with the invention of the different arts, drawing a distinction between their origin in the mind, or conception, and their invention, or manifest execution, or production. Painting and sculpture subsist by themselves independently, and are at once produced by the imitative effect which calls them into being. Other arts cannot exist independently, but require to be grafted on some other pursuit or sus-

taining medium ; *e.g.*, architecture is grafted on building, and eloquence on speech. The necessities of mankind drove them to construct habitations. These they ornamented by imitating natural structures, trees, foliage, etc. Thus arose architecture. "Architecture is to building what eloquence is to language" (p. 85). One would like to believe that portrait-painting was first invented by a Grecian maiden tracing on a wall the outline of her sleeping lover's shadow. "As shadows may be deemed the inventive cause of painting, so the impressions left by objects pressing on earth or stone, may in the same manner, be considered as the inventive cause of engraving, a branch of this art." (page 70.)

Sculpture appears the most simple of all the arts, as regards its invention, through mere imitation of nature. Blocks of stone or trunks of trees bearing a fanciful resemblance to men or animals were roughly hewn, so as to render the imitation more perfect. Thus we may trace the gradual progress of this sublime art till its culmination in Greece in such statues as the Laocoon, the Apollo, and "the statue that enchants the world." Poetry is the natural speech of unsophisticated man. Primitive man, beholding the glories of sun-rise and sun-set, (especially in those climates where such effects are most gorgeous) was impelled to express the emotions of his heart. How magnificently has Buffon described the perception of beauty ministered through each sense, and the effect of the contemplation of nature upon the first man ! Every savage expresses himself in poetical language. In the artificial life of civilisation, where close communion with nature is hindered by carking cares, and daily necessities, such mode of expression becomes comparatively rare. Nevertheless, there are few persons of liberal education who have not in youth attempted poetical composition, and it is remarkable that fifty or a hundred persons rhyme with fluency, for one individual who can write prose elegantly, or even correctly. Coleridge has remarked that the first person who expressed himself fluently in prose, must have excited far more astonishment in his hearers, than would be produced by the more natural and common, emotional, spasmodic, and unconnected utterances of poetry. It is not always easy to make a distinction between poetry and eloquence, so closely are these arts connected. Mr. Harris defines the essential distinction between them in Chapter v, Section 5.

The invention of music is easily explicable in the attempts of man to imitate the various harmonious sounds of nature, *e.g.*, the melody of birds, the numerous sounds produced by animals, the murmur of the gently flowing stream, the sighing of the winds through the trees, etc. Even sounds of an opposite kind, such as the howling

and whistling of the wind, the moaning of the sea, the roaring of the waves, the report of the thunder, the shrill and hoarse cries of birds and beasts of prey, although in themselves discordant, are suggestive of combinations productive of harmony. Moreover, sounds affect us, not merely directly, as they are melodious or the reverse, but indirectly, by the association of ideas; a truth which is thus happily expressed by Cowper :

“ Sounds in themselves unmusical and harsh,
Yet heard in scenes where peace for ever reigns,
Please highly for their sake.”

Dancing is very properly classed, not as an independent art, but as a branch of dramatic acting; since both dancing and acting attempt to represent the emotions and passions; and their expression is typified by the attitudes and motions of the body. Dancing has been called “the poetry of motion.” And the definition is just and true, so long as dancers bear in mind the advice of Hamlet to the players, “that you o’erstep not the modesty of nature.” But it is hardly illustrated by a professional *danseuse* pirouetting on the points of her toes, or by the frantic whirl and languid lounge which are displayed, alternately, in modern ball-rooms. Compare the “stampede” of the gallop, or *valse à deux temps*, to the stately grace of the *minuet de la cour*! Our ancestors surpassed us in taste as votaries of Terpsichore. Dramatic acting owes its invention to the natural impulse to imitate the actions, gestures, manners, and tones of others. Acting is not grounded on any practical pursuit, and requires no sustaining medium. Mr. Harris holds that costume is as independent a pursuit as sculpture, painting, or architecture, and so may fairly rank as a separate art. We think he is right, and feel sure that a very respectable and necessary body of tradesmen will endorse the opinion that costume is an art. It is to be wished that people in general held more correct notions on the subject of dress. “Surely,” says Mr. Harris, “if the decoration of our dwellings, and regulating their construction correctly, according to the principles of taste, is acknowledged to be an art, the decoration of our persons, the dwellings or temples of the immortal parts of our being, and setting them off to due advantage, displaying to the full the many beauties and graces which nature has bestowed on their formation, is no less a subject worthy of being thus treated, and of being classed among those pursuits entitled to this distinction.” (pp. 90-92.) “Costume and gardening may be said to have been invented in Paradise, &c. Hence these two arts were the earliest of them all, and God himself was their original inventor.”

Chapter IV deals with “The Rise and Progress of the Arts,” and

Chapter v with a most important subject, "The Peculiar Appropriate Province and Especial Characteristic of each of the Arts." Our author lays down the general principle that the visible arts, painting and sculpture, are best adapted for the representation of visible objects and actions, such as the forms of men and their bodily operations; while the invisible arts, poetry, eloquence and music, are mainly fitted for description of invisible subjects, such as the workings of the soul in all its various modes." (p. 156). Artists and lovers of art should carefully study this interesting chapter, in which each art is assigned its appropriate sphere or province. For want of this essential knowledge, we continually see artists making futile efforts to extend beyond their natural bounds the effects of their respective arts. As, for example, where a painter, neglecting subjects especially adapted to his art and genius, tries to grapple with those which properly belong to poetry or eloquence. Martin presented a signal instance of this in his attempt to depict the *creation of the sun and moon*, an effort which Haydon has well shown to be utterly beyond the scope of painting. Much breath and paper are wasted in unfair and partial comparisons of the arts, and arguments to prove the superiority of one or other; the preference being generally given to that which the individual practises, understands, or loves best. Such disputes simply illustrate the principle of the adage, "There is nothing like leather." Mr. Harris takes a comprehensive view of the arts, and every one competent to take such a view, will perceive that comparisons in this petty and invidious spirit, are misleading and contrary to the large, enlightened, and elevated ideas which a generous rivalry of the arts is calculated to produce. In fact, there can be no question of absolute superiority of one art over another, any more than of superiority in sex. Each art is superior while employed upon its own special legitimate subjects, and within its own natural province. It becomes inferior only when an attempt is made to drag it beyond its special domain and force it into unnatural competition with some other art, on whose province it intrudes.

Painting and sculpture possess the obvious advantage, that they speak a universal language, quite independent of nationality or clime. Pure sculpture (in contradistinction from bas-reliefs, which approach towards painting,) should not attempt to represent events involving a number of persons or a considerable space of ground, as it is destitute of colour and perspective. It was customary with the Greeks to paint their statues, and to impart lustre to the eyes by introducing precious stones. The figure-painter may conceal his ignorance of anatomy by the special resources of his art: colour, light and shade, perspective. These are not available to the sculptor, in whom ignor-

ance of anatomy is at once perceptible ; but, on the other hand, if the statue stand the severe test of inspection from every side, foreshortening, light and shade, attend the marble figure, as they do its living prototype, and the sculptor is not required to deal with that quality which forms at once the despair and the triumph of the painter—*colour* ! Poetry has an advantage over painting and sculpture in its progressive narration and sound, though destitute of those forcible, precise, and definite appeals to the mind through the eye in form and colour, which characterise the latter arts. Of all the arts, music appears to have an influence, not only the most direct and universal, but most independent of previous study and technical comprehension. Shakspeare has told us :—

“The man that hath no music in his soul
Is fit for treasons, stratagems, and spoils.”

Disraeli observes of the power of music : “ One blast of the trumpet and thousands rush forth to die. One peal of the organ, and millions kneel down to pray.” Sacred music seems to connect us more closely with the Infinite and the Divine than any of the other arts. While listening to the strains of plaintive music, inexpressible emotions crowd upon the soul : we feel the existence of mystical and super-human yearnings and aspirations to which this world can make no fitting response. And this assurance of immortality is forcibly and beautifully expressed by Jean Paul Richter’s apostrophe to music : “ Away ! away ! thou speakest to me of things which in all my endless life I have found not, and shall not find.”

Independently of the elevating effect of architecture, and the advantage to public taste, that our national buildings should be constructed in a style corresponding with the objects of the building, the frequent accidents arising from *panic* in theatres, churches, etc., bring home to us with terrible power, that we are in fact sporting with human life, so long as we permit public edifices of any kind to be so wretchedly constructed as to become traps for human beings trying in vain to effect ingress or egress. It is not only on the score that so many of our public buildings (and monuments) are atrociously ugly, and outrage all architectural principles ; we have a right to complain on account of a practical danger imminent and serious, from their want of safety, owing to faulty construction, in which respect they are a positive disgrace to our humanity and civilisation.*

Costume stands in the same relation to dress that architecture does to building. All civilised men and women are clothes-wearing animals, but few comparatively understand the æsthetics of dress. Ac-

* See letters on “ Prevention of Accidents at Theatres”, by J. McGrigor Allan, *Public Opinion*, Jan. 8 and 29, 1870.

cording to *Sartor Resartus*; "The first purpose of clothes, as our professor imagines, was not warmth or decency, but ornament. The first essential want of a barbarous man is decoration, as indeed we still see among the barbarous classes in civilised countries." We recall the sublime impudence of Beau Brummell to a friend who had drawn attention to his own dress, "My dear sir, do you call this thing a coat?" Of all the arts, costume best reflects the character of a people, not only as regards nations and periods, but individuals. The apparel oft proclaims the man. A cursory glance at a man's dress often unfolds the rank, profession, and even the *character* of the wearer!

Chapter VI treats of The Connection between the Different Branches of Art. Our author observes: "As the principal division in animated nature is into male and female, so is the leading division of the styles of art into the grand and the beautiful; the principal characteristics of the former correspond with the qualities of the male, and those of the latter with those of the female sex. In music, the bass corresponds with the grand in art and the male in sex, and the treble with the beautiful in art and the female in sex." (p. 199.) This is a happy analogy, which we recommend to the consideration of those ladies and gentlemen who are bent on revolutionising the relations of the sexes. Many of their schemes could only become feasible by abolishing all distinctions in sex, and this, we apprehend, even an Act of Parliament will not be able to effect.

The same principles regulate each art. Hence it is by no means fanciful or absurd, as many persons suppose, that music should undertake to illustrate an emotion, or describe an event, as in oratorios, operas, battle-pieces, marches, dirges, etc., although it is evident that narration is more legitimately within the provinces of poetry, painting, and sculpture. Mr. Harris observes (p. 201), "Sounds in music closely correspond with forms and colours in material objects, as loudness with greatness, and perhaps with darkness; softness with smallness, and with light colour." As regards loudness corresponding with darkness Haydn appears to have conceived just the opposite idea. In his oratorio of the Creation, to convey his conception of the sudden blaze of light attending this sublime description, "And God said, let there be light, and there was light," he made all the instruments join together in one grand crash; so that a wag remarked, at the creation of light it was necessary to stop one's ears! Our author correctly observes, that the arts mutually aid each other, hence that they should all be advanced together. We can quite understand how, from the infirmity of human nature, professors of the same art should be jealous of one another, illustrating the vulgar axiom that "two of a

trade never agree;" but it is a special proof of a narrow and sordid spirit, for a proficient in one art to be jealous of a proficient in another! We have heard with pain, a sculptor depreciate painting. This is not only a fault in *morals* but in *art*, which is actually benefited by a generous rivalry of *all its branches*. So intimately are these connected, that it is impossible to depress *one*, without, in some degree, injuring *all*. Mr. Harris shows that "corresponding causes regulate the prosperity and decline of each;" and that excessive patronage of any one art, to the neglect of the others, is, in the end, injurious to all, including that which for a time seemed to profit from this circumstance. "So," he adds, "excessive luxury, though for a period it may occasion patronage to the music or the drama, must in the end debase the whole character of art of each kind, and involve in the common ruin, even the very pursuit which alone appeared to be deriving advantage" (p. 211). To borrow an illustration from every-day life, it is not good either for a human being or for an art to be *coddled*.

In Chapter VII, our author divides the leading principles of art into two distinct kinds: those by which objects are delineated or described, so as to represent them efficiently, adequately, forcibly; and those by which objects or subjects are treated, so as to affect the mind with various exalted and refined emotions and excitements corresponding with their own nature. The former he terms the principles of Delineation, the latter the principles of the Picturesque, and to each he devotes a chapter. He observes (p. 247): "The real, true, and highest object of painting, and, indeed, of art in general, is not so much to imitate, as to interpret; not so much to reflect, as to teach us how to view, nature." And at p. 35, vol. ii, this truth is enunciated: "Few persons have even the capacity to observe nature, and to see her as she really is; the blaze of glory which encompasses her face veils it from all vulgar gaze; and even of those who are permitted to view her, but a very small number are qualified to record what they see and feel." It may indeed be said, that the *artist* alone (using the word in its most catholic sense) has the true and full use of his eyes; that he alone reads in the book of nature, sympathises with her changing moods, and penetrates her mysteries. But although the artist may look down with pity upon the mere man of the world, he cannot afford to despise a knowledge of human nature, and general information, beyond his own professional pursuits. Mr. Harris truly observes (p. 254): "An artist should be acquainted with nature, not only as regards copying her forms and manner, but should have a knowledge of her practical operations; should be a man of science, of ~~general~~ general information, and of the world; should have experience of life

and society, as well as of art, if he aspires to paint man; indeed, of all the branches of nature which it is most important for an artist to observe and represent closely, human nature stands preeminent." We quite agree with Mr. Harris, that "the Elgin marbles are in sculpture what Homer is in poetry," (p. 258), and that "Dress is to the human form what verdure is to the landscape." (p. 261).

In Chapter VIII we have the "Deduction of the Principles of the Picturesque." In continuation of his position that the germ of each and every art is found in the soul, our author observes that all the efforts of the mind of this class result finally in the excitement of it in four principal, distinct, and independent modes, classified as the sentiments of grandeur, beauty, pathos, and satire or ridicule. The chapter is occupied with an analysis of those principles. He enumerates the main essential elements of grandeur as: 1, dignity; 2, magnitude; 3, multitude; 4, strength; 5, boldness; 6, darkness; 7, irregularity; 8, simplicity; 9, motion. (P. 268.) From the illustrations, we select the following (p. 277):

"The most perfectly grand spectacle which it will ever be permitted to human eye to behold—which has formed the theme for the pencil of several great painters, but which painting, or any other art alone, is utterly incompetent adequately to represent—will be the Day of Judgment, in which all the elements of grandeur will be combined, and all co-existent to the fullest extent. Magnitude especially, and also multitude, must be among the elements in that scene, and the highest dignity will characterise its proceedings. No less than the whole Universe will be the space occupied by this tremendous occurrence. All Nature agonised and convulsed, shrieking forth at her approaching doom; the planets turned pallid and driven from their spheres; the mountains heaving their massive heads; the rocks quivering; the earth dissolving; the ocean foaming, boiling up from her mighty depths; the roar of the elements; and, yet more terrible than all these, the trumpet of the archangel and the voice of the Judge—must each contribute to render the scene the most sublime and magnificent and truly grand, which the mind of man can be capable of comprehending."

Chapter IX, vol. II, treats of composition in Art, which may be regarded as the *plural* of Delineation. The latter regulates the representation of single figures, and of the different parts and proportions of each. Composition regulates the representation of various separate figures and groups of figures, in a piece, and the different branches of it in relation to the whole. Nine sections are devoted to this important subject, and illustrations are given of the principles in each of the arts.

Chapter X deals with "Description, Narration, and Action in Artistical Representation." We summarise the author's very sensible remarks

on Motion (p. 30). There is no condition more important and more difficult to describe than that of motion, the state in which a large number of natural objects are constantly existent, and the ordinary condition under which a considerable proportion are viewed. Objects in motion must therefore be represented, if nature is faithfully to be portrayed. Poetry, music, and dramatic acting seem especially qualified for the description of motion, and are very imperfectly fitted for that of stationary objects. Painting, sculpture, and, more especially, architecture and gardening, appear wholly unadapted to represent motion of any kind. Impractical as it may seem, motion is represented in painting and sculpture to some extent. 1. By such an attitude of the figure as denotes action, as running or flying. 2. By certain adjuncts, as drapery blowing in the wind, the sea agitated by waves. Only motion of a moderate kind should be represented in painting and sculpture. We have always doubted the propriety of attempting to represent very rapid motion by either of these arts. We may paint or model a bird stationary or hovering, but a bird in rapid flight does not seem adapted for delineation. By depicting the flying bird, we actually make a *stationary* object of it, thus suggesting incongruous ideas. But if it be allowable to represent objects in rapid motion, they should be placed in the distance, and not highly finished in a picture. For we have not the opportunity to observe in detail the plumage of the flying bird, any more than to count the nails in the shoes of a galloping horse. Moreover, it seems paradoxical to observe a flying bird, or a galloping horse, motionless on the canvas, when we know that their natural prototypes, under such conditions, would pass too rapidly for minute inspection, and would be in a few moments beyond the field of vision. For these reasons, we think that in sculpture it is not good taste to represent an equestrian portrait in rapid motion. A trotting, prancing, or even a walking horse, does not appear suitable to the dignified repose of sculpture. Compare the statue of Wellington, before the Royal Exchange, with the prancing statue of the warrior in Princes Street, Edinburgh,* or with the trotting statue of George III, in Cockspur Street.

The remarks on the representation of Death, Section XI, are very correct, and afford a fair specimen of our author's style; but we have not space for a quotation. It is doubtful if sculpture supplies a more effective and pathetic delineation of approaching death than the cele-

* This statue is remarkable for defects still more glaring than simple want of taste in the attitude. The hind legs of the horse do not correspond in their proportions with the fore-legs. While the former seem modelled from a hunter, the latter, from their clumsiness, appear to have been modelled from a cart-horse.

brated statue of the Dying Gladiator, the original of which (by Ctesilaus, in bronze) Pliny is supposed to have referred to, in these words:—"He made a wounded man expiring (or fainting) and he succeeded in expressing exactly how much vitality still remained." The noble lines in which Byron has described this statue, are an illustration of how much farther narration can be carried by poetry than by either of the sister arts, sculpture or painting. But if death or dying be difficult to represent, far more difficult must it be to depict adequately the returning to life. Nevertheless, the great masters of art have grappled successfully with this subject. Mr. Harris instances the raising of Lazarus by Rembrandt, and, strange to say, does not refer to what we hold to be the far superior picture of the same subject, in our National Gallery by Sebastian del Piombo. The Lazarus of Rembrandt is, indeed, a masterpiece of light and shade; but the principal figure is defective, and the grouping scattered. It has been observed that Lazarus looks more like an invalid in a bath than the man for whom "Jesus" had "wept," coming forth from one of the cave-like tombs of Bethany. Haydon's conception of Lazarus was more noble. But of the Lazarus of Sebastian, Charles Lamb has truly observed: "The world has nothing to show of the preternatural in painting transcending the figure of Lazarus bursting his grave clothes. It seems a thing between two beings. A ghastly horror of itself struggles with newly-apprehending gratitude at second life bestowed. It cannot forget that it was a ghost. It has hardly felt that it is a body. It has to tell of the world of spirits. Was it from a feeling that the crowd of half-impassioned bystanders, and the still more irrelevant herd of passers-by at a distance, who have not heard, or but faintly have been told, of the passing miracle, admirable as they are in design or hue—for it is a glorified work—do not respond adequately to the action—that the single figure of the Lazarus has been attributed to Michael Angelo, and the mighty Sebastian unfairly robbed of the fame of the greater half of the interest?"

Chapter XI deals with Character and Emotion in Artistical Representation. The pre-eminence is rightly given to the representation of human nature. The aim of a great painter or sculptor will be not only to represent the outward form and countenance of the man, but to afford an idea of his inward character. Outward delineation is but a means to an end. Hence, to portray mankind properly, the artist must understand human nature thoroughly. Modern artists are deficient in the expression of individuality and character. Much time, attention, and study, are devoted to the anatomy of limbs and figures, but little pains are taken to observe and delineate correctly the anatomy of the face, and variety of character and expression

manifested through the features, which display the working of the soul, the portrayal of which is the noblest and highest attainment of art (p. 68). "The highest prerogative of the artist is the one which resembles that of the Divinity himself, the power of giving life to his productions" (p. 71). Modern artists being limited in the exhibition of the naked figure, which afforded the ancients such scope for the display of skill, and being less aided by drapery, should rely more exclusively on expression and character (p. 73). Mr. Harris thinks the surest and most efficient mode of representing correctly the intellectual and moral character of anyone, is to first sketch from nature a head generally suitable for the individual, and then to adapt as exactly as possible, one by one, the different features according to the character intended, from the assortment of those classified for this purpose, as contained in the proposal in a subsequent section.

Turning to the indicated Section 8, p. 89, we find that character, as manifested by the face, depends on two principles: 1, the form of each particular feature; 2, the action and operation of those several features. Why should not the specific individual character which attaches to each single conformation of feature be analysed and arranged? Such a classification, he thinks, might be effected, as perfect and ample as that of colours in painting, or different styles of rhyme and metre in poetry. In the portrayal of the passions and feelings, this has been attained by Le Brun. In character, it has been attempted by Lavater, who, in his *Physiognomy*, evinces the practicability of such a plan, which would form a complete artistical grammar for the painter of human nature. Hogarth, the most original of British painters, appears to have reduced this theory to practice so far as his own works were concerned. The following is a truth which portrait-painters should lay to heart. "A knowledge of physiognomy is, in reality, as essential to a painter as a knowledge of anatomy. Physiognomy is, indeed, the anatomy of the features, which express the character and emotions of the soul." (p. 92).

Chapter XII deals with "Imagination and Invention in Artistical Representation." Our author explains the nature and extent of the originative powers, and shows that the mind has no faculty to call into being anything beyond its own experience, and that the capacity of origination consists in nothing more than the power of compounding different ideas belonging to various objects, so as to form a new one, as in the ideas of a centaur, a dragon, a sphinx, etc. (p. 124). "Thus, in the case of Deity, of whose form or appearance we know nothing, we are unable to give any description of Him that we can consider in any way just or adequate; all that has been attempted here has been effected by borrowing and combining ideas of other

beings with which we are acquainted, so as to constitute one which was deemed to be, so far as we could conjecture, representative of Him." The elements of origination are defined as: 1, the idea of obscurity; 2, that of the possession of power; 3, that of the possession of energy; 4, that of novelty; 5, that of the possession of vastness; 6, that of supernaturality; 7, that of dignity; 8, that of the possession of the quality of noxiousness; 9, that of the possession of the quality of divineness. Section 9 contains some very interesting remarks on the Supernatural in Landscape and in Colour. It is difficult to say whether painters or poets have turned to most account the effects of moonlight and their soothing influence on the mind. Amongst artistic examples of imaginative efforts, the author gives an elaborate description of Michael Angelo's "Last Judgment", in the Sistine Chapel at Rome—perhaps, the most extraordinary and finest picture in the whole world. When will the splendour of art return to the naked walls of our churches? When we reckon the glorious roll of eminent men in art and science which Great Britain and Ireland have produced, why should we doubt the capacity of our race to develope a genius equally gifted with the Florentine? But while the doors of Catholic churches would open to admit the paintings of a Martin, those of Protestant churches would remain firmly closed against the productions of a Raphael and a Michael Angelo! The taste and reverence of Mr. Harris are both displayed in the many illustrations which he takes from Scripture. Thus, in "Celestial Comparisons and Descriptions", he quotes from Revelation the sublime description of the Last Judgment, which we have actually heard a self-sufficient Atheist lecturer hold up to the ridicule of his audience! "By every true lover of poetry, and every admirer of imaginative effort of the most exalted kind, this glorious and sublime masterpiece of inspired narration cannot but be studied with rapture" (p. 186).

The concluding two chapters contain a retrospect of British Art and its Prospects. There is an interesting account of the origin and growth of the arts. In 1350 were commenced the pictures and designs in St. Stephen's Chapel; and it is curious to see in all the accounts, observes Haydon, the continual allusions to oil-painting. Illustration of missals and books of chivalry was a favourite pursuit among the higher classes and the monks. Some of these performances were very beautifully executed, with brilliant colours. During the reign of Henry III, foreign artists were employed for the embellishment of our cathedrals and churches. In the fifteenth century, a famous painting was executed in the cloisters of St. Paul's, which is supposed to have furnished the prototype of Holbein's celebrated design, "The Dance of Death." Painting, but especially portrait paint-

ing, rose during the reign of Henry VIII. Holbein, Rubens, Vandyke, and other illustrious foreigners, assisted to inspire a taste for the pictorial art. Raphael's Cartoons were purchased by Charles I. Sir James Thornhill, who painted the cupola of St. Paul's, was the first English artist worthy of being classed as a historical painter. Sir Joshua Reynolds was the first founder of the British school of painting. In a comparison between Landseer and Sneyders, Mr. Harris thinks that, though both are admirable in depicting animal character and feeling, the expression of the British painter is generally *passive*, while that of the Flemish artist is, in most cases, intensely *active*. An illustration of this is found in the fine Sneyders recently exhibited at the Royal Academy. It may be added also that Sneyders is the most natural colourist.

In landscape, oil and water-colour, and in portrait, the English excel the Continental artists of the present day, though falling far below the portrait-painters—Vandykes, Knellers, Lelys, and Reynoldses, of former ages. He thinks that Turner excelled in mechanical rather than in mental efforts. His skill was displayed especially in prismatic effects, and on this his reputation will rest. He is far inferior generally, and in their highest qualities, to either Claude, Salvator Rosa, Wilson, or Gainsborough. He is superior to Martin in mechanical skill, although far inferior in imagination and mental power, and also in perspective effect. "The science of photography," Mr. Harris justly remarks, "has greatly aided in the copying of paintings and statues, as also the obtaining correct and literal portraits of living characters." Still "Photography presents to us not the soul-gifted man, but the form only, void of vitality and of soul. It brings before you only the ghost of nature. Phantom-like it is pale, stiff, cold and colourless, destitute of blood in the veins, fire in the eyes, or glow in the cheeks; a dreary contrast, not only to the living man himself but to the almost animate representation of a Vandyke, a Reynolds, and a Lawrence" (p. 204).

In the time of the Saxons, our churches were adorned with carving and statues, rude and uncouth generally; yet Haydon informs us that in Edward the Confessor's reign, there were executed bas-reliefs as good as anything done at that time in Europe. They even attempted representations of the Last Judgment. Some of the monumental effigies, as early as the thirteenth century, had sufficient merit to excite the admiration of Flaxman, the greatest of our sculptors, whose genius was mainly confined to *designing*, instead of being permitted to expand itself in marble. From what he *was*, we may imagine what he *might have been*, had he received proper patronage from State, Church, or Aristocracy. Mr. Harris thinks that "the purest and fairest samples

of genuine eloquence are to be found, not in the speeches of our patriots, nor in sermons of our celebrated preachers, but in the pages of our philosophical and critical writers—our Addisons, Johnsons, and Macaulays. The study has here eclipsed the senate" (p. 210). What a progress in architecture, from the temples of our British ancestors at Stonehenge and Avebury, to the various cathedrals which testify alike to the piety and taste of those who reared them; to Westminster Abbey, and St. Paul's, which our author declares to be, "in its exterior at least, far more classical and picturesque than St. Peter's at Rome" (p. 213)! "Among the ancients," observes Mr. Harris, "manual dexterity was made subservient to expressing the noblest ideas of which the mind is capable, and calling forth the loftiest emotions of the soul, and was regarded only as a means to this great end. With the moderns, manual dexterity is the very end itself aimed at, and nothing higher than, or beyond this, appears to enter the mind of many an artist, or if it does, the ideas are so poor that they are utterly lost sight of in the care and attention bestowed on the manual excellence aimed at in the performance," (p. 218). Hence the main and leading characteristic of art in our day is that of an insipid correctness. Mediocrity is the prevailing state of art at the present period (219). In music and architecture to what single grand original performance can we appeal? (p. 221).

Since the disappearance of Garrick, Kemble, Mrs. Siddons, Macready, dramatic acting has declined into insipid mediocrity. "Here, as in painting and poetry, we excel only in the representation of domestic every-day life. The grand, the sublime, and even the tragic, appear to be quite beyond our sphere." (p. 221). "Costume possesses neither the grandeur nor dignity of the martial habit of the ruder middle ages, nor the splendid magnificence and real beauty of earlier periods in our history. Originality is lost in neatness, genius is directed only to the promotion of tinsel and tawdry." (p. 222.) It is refreshing to know that in one art at least, Gardening, England has not only reached a high degree of perfection, but excels all other countries, not merely in Europe but throughout the world, in the tasteful manner in which ornamental grounds are disposed, not gardens alone, but parks and pleasure grounds, etc. We doubt, however, whether gardening has not been carried to a greater perfection in China where it ranks high as a national art, and where those employed in this pursuit are men of extensive information, and rank among the followers of an intellectual profession. (p. 249). Our author concludes his retrospect of British Art by considering the counteracting influences affecting art, and deals with three reasons assigned for our inferiority to the ancients. 1. That our climate does

not favour out-of-door life. 2. That it is unsuitable for the development of national genius. 3. That art and religion are not intimately blended together in this country. (p. 223). Art has been largely influenced by the strong and decided material bias of the age, which induces us to regard with indifference whatever is intellectual, imaginative and unseen, and to value only what is real, apparent, gross, and visible. (p. 225). We hope and believe that the dawn of a better day is at hand; for we are convinced that materialism and atheism are utterly opposed to the progress of the arts.

Mr. Harris observes (p. 236), "The incapacity of our artists to produce great works of real intellectual merit, was sometime ago fairly tested by the exhibition of the cartoons in Westminster Hall; liberal prizes having been offered by Government for the best designs in historical and imaginative composition. The general defect of the English school was peculiarly visible in these performances as regards want of expression, and character, and feeling which they displayed, while in each, the drawing and grouping were scrupulously correct." Want of adequate patronage is the chief cause of the backward condition of art, especially painting and sculpture, where portraiture only is encouraged, not from love of art, but because it ministers to social and domestic feelings, and gratifies family and personal vanity (p. 238). We have been called a nation of shopkeepers, and the mercantile spirit of the nation seems to pervade all ranks and classes. The purchase of works of art is looked upon as a mere pecuniary adventure. They are selected as an investment; it is not works of merit, but works of value, that are sought. The works of living artists are disregarded, because they have not reached their ultimate sterling market value; in favour of those of the old masters, which have a specific value, and whose worth depends, not on their intrinsic merit, but on their genuineness. But the most extensive and direct cause of want of patronage, Mr. Harris thinks to be the poverty of the nation, occasioned by our immense national debt and the many taxes to which we are in consequence subjected (p. 239). "It is surely chilling to art that, while every other profession brings to its followers comfort and competence, the artist starves; the higher his genius the lighter will be his purse, as fewer will appreciate his merits. Not unfrequently, when they are discovered, death has placed him beyond the reach of reward."

The defective education of our artists is another cause of the deficiency in intellectual merit of the works produced, especially of that defect characterised by Lamb in his admirable essay, entitled "Barrenness of the Imaginative Faculty in the Productions of Modern

Art." It is of course impossible that noble and sublime compositions should be produced by those who are destitute of noble and sublime conceptions (p. 248). It is, however, but justice that the public at large should bear their share of blame, as the defect arises from the neglect which the arts experience as a branch of polite education. Mr. Harris thinks that "a national gallery of really good copies from the originals by artists of eminence, of all the most renowned paintings, with a corresponding collection of genuine casts from the most celebrated statues, would constitute a most valuable school not only for artists, but for the people at large," as "good copies of great works are far preferable to undoubted originals by second-rate masters" (p. 253). Mr. Harris likewise suggests a sort of partnership in the production of works of art. He thinks the conception of a grand artistical composition may be effected by one person, specially gifted for that purpose, but not possessed of the ability to embody his ideas on canvas; while another person not gifted with the originating or creative power, might embody on canvas such ideas after they had been intelligently expressed. By this means, the poet and the painter would mutually avail themselves of the special gifts of each; the former supplying as it were the *soul*, the latter, the *body* of the composition. To designs thus produced, Mr. Harris would give the general name of Graphopneumata, or spirits or souls of pictures, *γραφῶν πνεύματα* (p. 259). He further informs us that Chantrey's monumental work, the Sleeping children in Lichfield Cathedral, was suggested and designed upon the principle here propounded. It may be said indeed, that such Graphopneumata already exist, in the finest poetical and prose compositions of our great writers, from which the author has copiously enriched his pages by well selected quotations. Take as an example, the splendid description of a clear moon-light night from Homer (p. 134), and the minute and touching picture painted by Sterne of "The Captive," which could not fail to inspire a painter possessed of a moderate share of feeling and imagination. Mr. Harris includes Sterne, Burke, and Macaulay among the great writers, who, if they had followed painting as a pursuit, would have produced sublime and astonishing masterpieces, independent of any deficiency in mechanical execution under which they might have laboured (p. 261).

In reference to the establishment of a tribunal of Fine Taste, he observes: "It might be fairly urged that the Royal Academy is the fittest body, and indeed eminently qualified to constitute the tribunal in question. But it appears in many respects desirable that others besides artists, such as poets, critics, scholars, and men of letters should be combined in this jurisdiction; in addition to which it may

be observed that the performances of artists, of members of the Royal Academy, frequently require the free and independent criticism and correction of such a tribunal." (!) The proposal for professorships of art, "in each of our principal universities, with stipends suitable to, and corresponding with the importance of their duties, and adequate to ensure the services of really efficient men," derives special significance and support from the course of lectures now being delivered by Professor Ruskin. It would be interesting to inquire of the numerous "Bachelors and Masters of Arts," sent forth from our universities, how many *arts* each has severally learned there, either in theory or practice? We take the opportunity of this mild and courteous notice of the Royal Academy (remarkable also as being the *only notice* in a book on Art containing more than 600 pages), to close our Review; with the hope that the reader will be induced to make a direct acquaintance with Mr. Harris's interesting and instructive essay on "The Theory of the Arts."

J. McGRIGOR ALLAN.

THE BOOK OF NATURE AND THE BOOK OF MAN.*

CAN a book, written on an old subject, lay claim to originality? "Solomon the wise" says, "there is no new thing under the sun." And for a thing to profess novelty is usually sufficient for it to have its truth called in question. This is no doubt good, and it were well in the present day, if the propounding of every theory of high pretensions and involving great consequences, were brought to the searching test of analysis and critical examination. But in the present day things go on so rapidly that there is scarcely time to be critical.

A general principle set forth as of universal application and to be found everywhere and in everything moral, spiritual and material, must needs have been profoundly sealed up, if it remain buried to the present day. To say that all new discoveries are simple when found out is a trite remark, whose truth most persons will admit; but the writer of the "Book of Nature, and the Book of Man," claims

* *The Book of Nature and the Book of Man.* By C. O. Groom Napier, F.G.S., F.A.S.L. With a Preface by the late Lord Brougham and Vaux. Illustrated with photographs and numerous woodcuts. John Camden Hotten, Piccadilly.

to show that this principle always has been acknowledged *in fragments*, in all ages and nations from the highest and most civilised to the lowest and most degraded. This is evidently the view of the subject taken by the great Chancellor Lord Brougham, who has written a short, but highly commendatory preface to Mr. Napier's work. Lord Brougham says of him: "He is entitled to the credit of great originality, as the systematiser and reducer to a science of an idea, old as that of the Greek sages; but which has hitherto been treated only in a desultory manner by poets and metaphysicians of the German school." So that the man who writes in a new way on old and well-established truths, is perhaps as original as any man can be. Truth is not new: every *principle* connected with man and nature is as old as the creation. The discoverer of principles, does not invent a system. If he unravels a so-called new truth he merely makes bare what has existed from the beginning; and were it possible for him to carry back his views, they—supposing them to be true, would but at least bring him to the fountain of truth, and the author of creation. Lord Brougham further says, "The book unfolds a course of thought which, if I were a younger man, I should like to pursue carefully. Alexander von Humboldt would have been much interested in this work, as the style of argument reminds me of that which occupied his attention in the early dawn of the science of this century." This remark of the Chancellor speaks to the heart of most of us who are advanced in life. How many things would the old man do, if he had to begin life again. But all old men are not candid enough to perceive, that young ones have found out new paths, which they had overlooked in their journey.

We are great admirers of A. Von Humboldt, but we think that the following passage, which no doubt Lord Brougham had in his mind when he wrote the above preface, notwithstanding the beauty of its expression, and general truth of its similes, is somewhat too vague to be convincing to the general reader:—

"While the difference of sexes in all living beings beneficently binds them together in prolific union, the crude matters of inorganic nature are impelled by like instincts. Even in the darkness of chaos, matter was accumulated or separated according as affinity or antagonism, attracted or repelled its various parts. The celestial fire follows the metals, the magnet, the iron; amber when rubbed attaches light bodies; earth blends with earth; salt separates from the waters of the sea and joins its like, while the acid moisture of the *stypteria* and the fleecy salt *Trichitis*, love the clay of Melos. Everything in inanimate nature hastens to associate itself with its like. No earthly element (and who will dare to class light as such?) can therefore be found in a pure and virgin state. Everything as soon

as formed hastens to enter into new combinations, and nought save the disjoining art of man, can present in a separate state ingredients which ye would vainly seek in the interior of the earth, or in the moving oceans of air and water. In dead inorganic matter absolute repose prevails, as long as the bonds of affinity remain unsevered, and as long as no third substance intrudes to blend itself with the others; but even after this disturbance, unfruitful repose soon again succeeds.”*

It appears to us, that the great writer is rather contradictory, in saying this, “In dead, inorganic matter absolute repose prevails;” for he is thus supposing a state of things which never occurs; as in the present fabric, rest from change never takes place. In dead, as in living matter, the action and reaction of forms and substances on each other is unceasing. We think the author of the *Book of Nature* has well expressed this in these words (p. 345):

“Man’s fall was typified from the earliest creation of matter, from the time when the “Elements began to move.” Their disintegration, to take part in higher combinations, typified his fall and progress. The creation of the lowest plants and animals, constructed of these elements and their continued existence, involved disintegration:—The lower forms must feed the higher. The lowest plants and the lowest animals died to feed the higher; the highest plants and the highest animals died to supply food and satisfy the wants of man. His body dies that his spirit may attain a higher rank; it decays, that out of its ashes may spring a man of a higher order. Thus death began as soon as life. It was as necessary to the maintenance of life as of progress. Lower races pass away that higher may succeed, even of Man’s imperial family.”

We have frequently heard it remarked that children are great physiognomists, and we believe it to be often the case. Children are generally more or less lovers of nature, of flowers, of animals, and of children younger than themselves. This is before they have received artificial training, and it proves that these feelings or instincts are natural, *i.e.*, *born* with them; and it is not until education and example have produced their effects that this love of nature and *physiognomy* wears off, as to a certain extent it does in most cases. The author of the *Book of Nature and Man*, says (p. 2):

“Man has always been a physiognomist, that is to say an interpreter of signs. Some branches of knowledge are studied almost entirely physiognomically—as geology, founded on the crust of the earth, and yet pointing down to the invisible interior. The classification of man on a philological basis is mainly physiognomical, as its elements are arranged in accordance with signs possessing a resemblance, themselves pointing to processes of mind of similar origin.”

* “Vital Force”, in Humboldt’s *Views of Nature*, p. 383.

It is often said we should not judge by *appearances*. This we believe to be a fallacy ; for the fact is every one does judge by "appearances," or what they see. It is true, man does not stop at the mere outside, he reasons further, but he chiefly does so from what he sees.

We think the observations on head forms in the introduction to this work, entitled to the consideration of every anthropologist, whether he be a phrenologist or an opposer of that science. Mr. Napier divides the head-forms into round, long and narrow oval, wedge-shaped, square, wide, long and short prognathous and pyramidal. It is astonishing how much more persons feel than they reason about faces and forms ; almost everybody has a little theory of his own on the subject, not acknowledged or talked about, but a kind of instinctive way of settling his feelings and opinions of people ; and not merely the men, but even the dogs and horses he comes in contact with. What is this but the physiognomical sensation ? It is often remarkably developed in negroes, and is stronger in most other nations than in Englishmen. The remarks of our writer on the round-headed Mongols are curious (p. 3), and if he be correct metaphysics and physics singularly join hands. The "round-oval" is certainly very conspicuous in men of talent, and is confessedly chosen by painters and sculptors to show forth manly beauty and intellect.

The chapters on Geography and Ethnology contain a mass of condensed information in a wonderfully small space. But while the writer gives a summary of so much in a few pages, his main object, as throughout the work, is to display the harmony in nature, and its harmony with man the "*Microcosm*." It would be injustice to him not to remember that he deals in *general principles* ; so-called exceptions may occur to many persons ; but these prove nothing adversely to the above theories. Strictly speaking there is *no exception* to a rule, all things being equal, but how seldom is this so. That nations *as a whole* occupy countries best suited to their moral and physical constitution, is we think indisputable. The remark on the harmony between the characters of mountaineers and their country, as between flat countries and their inhabitants, is well illustrated in the following passages (p. 18) :

"The inhabitants of mountainous regions are usually considered to be distinguished by loftiness of spirit and love of freedom. Pure mountain air may have somewhat to do with cherishing this feeling, and scenery of a grand character, abounding in rugged precipices and deep defiles, may have somewhat to do with kindling into flame an enthusiasm which already exists. But it is an independent spirit which prompts a nation ; it is a self-reliant spirit which leads to these lofty regions, where loftiness may commune with loftiness, and

a towering spirit with a 'towering height.' The inhabitants of mountains may sometimes envy those of the valleys, where the sun shines so long, and in the days of prosperity, descend to eat the fruit of the citron, the olive or the vine; but adversity they feel to be more in harmony with the desolate crag.

"In flat countries lying at a low level, the inhabitants are mostly dull and heavy. They may be industrious, as in Holland, where the stimulus of the wants of an increasing population first led to the subjugation of the sea—a conflict which they have successfully maintained for centuries. They gaze on its 'mountain billows,' which are the only mountains they commonly behold; and which are ready with an avalanche of foam to take advantage of any defect in their 'much vaunted bulwarks,' glory over any flaw in their outworks, and engulf in the seething German Ocean centuries of labour."

The remarks in this work on the analogy between the course of rivers in many countries, and the stream of emigration by men from them, are we think very striking. The writer says: "The rivers of Europe and Asia flow in different directions towards oceans and seas, which may be taken to signify, to a great extent, the direction followed by human emigrants from the different countries. The longest portion of the rivers in Great Britain, Germany and France, flow towards the Atlantic or the German Ocean connected therewith. In harmony with this, the flow of population from these countries, is mostly across the Atlantic." And further on of the rivers of America he says, "The sea is the medium of communication between the countries; the productions of one flow down its rivers and are exchanged for those of the other. The larger size of American rivers, points to active vegetation, and to the export on a large scale of the productions of the vegetable kingdom. The portions of America which yield the most valuable minerals, are more deficient in inland navigation, than those which yield timber, and raw vegetable products. The abundance of water, although the one means of producing this fertility, yet has a further significance. *The metals and minerals are meant to be conveyed on roads of their own material.*"

Mr. Napier sees a very decided analogy between the mineral products of our own country and the character of its inhabitants, especially in the north (p. 60).

"The minerals of Great Britain illustrate national character in an eminent degree. Coal is one of our most important minerals, and is more abundantly found in the British Isles than in any part of the world of equal extent. This coal is a type of condensed energy such as the Teutons displayed; and which is more manifested, singularly enough, in the coal producing districts of Great Britain, where the population have often coal-black hair, as in South Wales, Northumberland, and Durham. They are more energetic than in the Southern and Eastern regions, which produce no coal. Coal is a coarse, dirty

mineral, but it contributes to diffuse a genial warmth throughout every district of the country. The colliers are generally admitted to be a coarse and somewhat gross section of the community, but those who visit them in their humble homes are likely to have 'a warm reception.' It is sometimes said that the bulk of British energy is 'Northern;' and it must be admitted that energy and self-reliance are more common in the North and central districts of England, than further South. But with this great power, there is much 'flame,' 'flash,' and 'smoke,' typified in a 'sea coal fire,' as contrasted with a charcoal fire, which can be obtained from local material in almost any place. This flame is clearer and hotter than that of the coal, and is much purer and more refined. It burns with little noise, flare, or smoke. This is typical of the Southern man of energy, who is much more refined than his Northern congener.

"Iron and coal, so necessary to each other, are generally found in close proximity. The iron may here represent the physical surroundings of a nation, while the coal represents the nation itself. The Teutons are the principal workers in coal and iron throughout the world. Wherever they go they turn up coal, be it Australia, America, New Zealand or Borneo. The 'charcoal iron' is the purest in quality, and being mainly made in Sweden, may typify the Scandinavian element amongst the ethnic forces of Europe; while the iron made with mineral coal typifies a coarser Saxon element.

"The cast iron so largely prepared from the clay ironstone, exactly answers to the 'iron and clay' of Nebuchadnezzar's image, which we shall dwell upon in our 'Chymistry of the Mind. It is from this iron and clay that the main greatness of the Teutons is derived. Gervinus is also right when he thinks that the toes 'part of iron and part of clay,' represent the Romanic and Teutonic nationalities, in the *locum tenens* of the Roman empire. The iron clearly represents centralised power, while the clay represents oligarchism; and is by some thought to be a type of democracy. Such might be as true at one age of the world, as the other might have been at a former period. The yield of metallic ores in Britain is vast indeed. A large portion of the metal of the world is turned out of our soil; a very large proportion of the tin of commerce is British; a goodly amount of copper, zinc, lead and the less abundant metals. Also a considerable portion of silver and a little gold accompany the lead ores of Britain."

And he says, we think very truly, that "we are industrious rather than thrifty as a nation. Were our thrift equal to our energy and industry, we might absorb much more wealth than we do, and keep the whole world in *leading strings or chains wrought out of our own metals.*" And, writing of our pottery, he says: "The civilisation of Great Britain may be read in its jugs and basins, from the period of the Celtic unbaked ware to the modern productions of a Wedgwood and a Minton—a compass, the points of which connect ancient and modern history."

A rapid bird's-eye view is given over the great countries of the

world, with interesting records of the fauna and flora of each, well contrasting them with each other, and showing the harmony of all with the human inhabitants. Lastly, a few observations are made on India and the Indo-Chinese nations, which, as speaking for themselves best, we here quote.

"India is the richest in natural resources of any country of Asia, and might well be independent of all for necessities and luxuries. The precious metals are not so abundantly found in India as in some countries less rich in organic life. Hence the tendency of them to gravitate towards the peninsula of Hindostan; while the lighter spices and manufactures of Hindostan rush back to fill the vacuum. India is protected on the north by chains of mountains, and on the west by deserts; while on the east the comparatively inert and unenterprising Indo-Chinese races act as a sand-bag, to break the force of any great incursions, from the east, of hardier or more warlike nations."

In the preface, Lord Brougham says, "Man is undoubtedly the Microcosm"; and he specially commends the eloquent way in which the author of the *Book of Nature and Man* has treated the chapters on Botany, Zoology, Geography, and Geology. Plants are taken up from the lowest and most insignificant weed, to the highest and grandest of our forest trees. They are each and all compared with Man in his various classes of life, now in one nationality, then in another: the object being to demonstrate the unity of Man and his various qualities, whether in the more ignorant savage of Australia or Africa or in the highly civilised European.

It is not a new idea to see in lofty majestic trees a type of nations or their kings. We quote here the passage on the oak from the *Book of Nature*.

"The oak (*Quercus pedunculata* and *Q. sessiliflora*), our national tree, is an emblem of British stout-heartedness and of the British constitution, which, like the tree, has continued longer than most of its fellows. Trees are emblems of nations. The yew, the oldest of European trees, represents the antiquity of the Celtic nations of Europe, which is of the date of two thousand years and upwards—the very age the yew tree attains. The oak, among the Romans, was sacred to Jupiter, and being the most famous of the indigenous trees of Europe, let us for a moment consider it as a type of the Roman Empire.

"That sweet voice of the grove, the nightingale, builds its nest at the roots of oak trees with oak leaves, and its song rises on the suppressed breeze to heaven like the flight of the rapt soul. The purple emperor (*Apatura iris*) rules the insects of the oak, and is Cæsar's emblem. He eats many of the oak leaves; but still the *prestige* of his name, and the gorgeous lustre of his plumes, cause the greatest admiration for him. The oak-gall is occasioned by the puncture of

a little hymenopterous insect. It is an excrescence, yet most useful to society. What can be more bitter than gall or than the anger of a Gaul? The irruption of the Gauls on the Roman Oak marred the beauty of the tree, while it added to its utility. Without galls there would be no ink, and no satires 'dipped in gall' could be written.

"Tannin, one of the most important contents of these excrescences, is astringent—the most powerful in general use having a binding influence on the body of man. This the great nation of Gauls exercises in Europe. And why? Because their astringency causes them to be dreaded. It is a matter of fact, that the strongest astringents have sometimes a contrary effect in very large doses. They bind more tightly than the frame can bear, so it gives way with an explosion. The little cynip that occasions these galls illustrates the development of the Empire of the Franks.

'Cradled in obscurity,
When developed to maturity,
Flies forth to colonise.'

"The oak-apple, so much sought for in May, to commemorate the residence of Charles the Second in the oak, may illustrate British progress and colonisation. Bees place their stores of wax and honey in the hollow oak, whose hard walls preserve them from the spoiler, just as the 'wooden walls' of England throw their strong shields around her commercial and peaceful industries. The oak has other insect residents. There is the purple hair streak (*Thecla quercus*) amongst the butterflies, which, by its hues, reminds us of the emperor; and it is an emperor in a small way, being difficult to catch or subdue. If the purple emperor was a type of Cæsar, so this little hair streak is that of the imitators of Cæsar who resided in the Roman empire. Such were Charlemagne, Charles V, Napoleon I.

"The young leaves of the oak are of an exquisite pink-brown colour, reminding us of the tint of new-born babes. As the leaves expand, they go through the light virgin tints of youth, deepen into the strong green of maturity, the olive of middle life, and the brown of decay. Those plants which shed their leaves, from Homer's days to our time, have been the type of rejuvenescence. The common acorns were the food of the ancient Britons, and those of some species are almost equal to chesnuts in flavour. They are protected by delicate cups, which make them among the most beautiful and finished seeds in nature. There is about them a simple beauty, a rustic elegance, which surpasses the most brilliant tints unaccompanied by an elegant form.

"The oak tree confers great benefits on man. It exercises, as he contemplates it, so many faculties of his mind, and supplies many wants. Its bark tans his leather; its galls are necessary for his ink; its timber is the 'prop of his house', and it supports the roof 'vocal with his Maker's praise.' With the oak he grooves the waves, and ventures on the treacherous sea; and he sleeps in an oak coffin.

"The acorn-cup, full and overflowing, sums up the oak's utility."

We think some of our anthropological friends will agree with Mr.

Napier's remarks on the Negro, which he indulges in as connected with the sugar-cane. He says (p. 109):

"The sugar-cane was first planted in Hispaniola in 1506; and soon the great profit derived from its culture made it the principal occupation of the European colonists. If the Spaniards conveyed it to Mexico, the Portuguese did the same to Brazil; and the cane wandered, as *the walking stick of civilisation*, over the West Indian islands.

"The preparation of sugar involved the expenditure of a great amount of labour, which, in intertropical latitudes, Europeans felt unsuited to their constitutions. The aborigines melted away under the cruelties and new mode of life forced upon them by their European masters. But the desire for sugar did not dissolve in the minds of luxurious Europeans, who were only stimulated to offer in return for it their choicest industrial products.

"Negroes in the Canaries and other islands of the African coast were found to answer so well as labourers that, in due time, they were removed to the western world. Their docility, strength, and good-natured fecundity, rendered them the true rough labourers of the tropics. Avarice, uninfluenced by feelings of humanity, caused their removal in a forcible and cruel manner, and their retention in slavery, at first little better than was their frequent lot in their own country.

"A nation was said to dwell securely when it 'dwelt under its own vine and under its own fig tree.' These are wholesome fruits. The Negroes of Western Africa dwell under poisonous euphorbias instead of vines, and under baobabs instead of fig trees. It has been frequently said that the Negroes brought to the West Indies were snatched from peace and plenty, independence, and the dignity of free men, to be ground under the iron heel of masters, in whom sentiment would fain see a greater savage than in any African chief. But if we look matters in their true light, we must see that the condition of the negroes, at the worst periods of servitude in European colonies, was an improvement on native life in Guinea, under unrestrained cannibalism, fetichism, and wholesale slaughter.

"The negroes, besides having been isolated for many ages from superior races, are inferior as a raw material. Had this material been better and the manufacturers of a higher moral caste, more might have been done. But 'no amount of washing can make a black man white.' Europeans wanted sugar, and, like 'truly practical men', did not inquire how it was obtained, although a few afflicted with 'Maw-wormism'—that dyspepsia of the mind—turned sour at sugar because it was dark, and so it had to be refined for their use."

After the chapters on Plants, the lower forms of life are taken up, including insects. Here also types are drawn between nations and even the most degraded species of animal life; for the Hydras are compared with the Jews and the Actinia with the Teutons.

"Some nations possess a Hydra-like tenacity of life; they may be cut in every possible manner, and yet each section forms the nucleus

of a new nation—small, perhaps, but still performing all the functions of a distinct and separate nationality. Such were the Jews; cut and divided in every possible manner, yet each fragment was representative of the nation, and became such in all lands. Thus the nation is inextirpable, having all the vitality, flexibility, and grasping power of the Hydra, in which they exceed all other animals, as the Jew, perhaps, does all other nationalities" (p. 121).

"If the Hydra be a type of the Jewish nationality, these (Actinia) are a type of the Teutons, being more marine in their habits, more prettily coloured in complexion, less scrupulous in diet, and inclined to hatch their own offspring or colonies. (It appears these low-classed creatures hatch their eggs, and are so far much in advance of the Hydra, which are propagated in a different way). The tentacles of the Actinia have analogy at once to the vegetable world and to the mixed independent and dependant character of Teutonic society, in which all hang on *one stem*, yet mostly work on their own account" (p. 122).

The observations on insects—especially on moths and butterflies—will, perhaps, commend themselves to more readers than many other portions of the book. They are not so original in their analogies as some of the chapters, and are, therefore, less startling, and will be less apt to call up opposing thoughts in the mind. As a specimen of the smooth, poetical, and highly moral tone of this author's writing, we give here a passage from the Moths (p. 146).

"The *Noctuxæ*, the most truly nocturnal as a class, are more commonly dull coloured than most of the moths, and harmonise well with the gloominess of night. Some genera are most brilliant in colouring, and, wonderful to relate, have Greek and Hebrew letters on their wings. This dusky genus of moths, that fly principally during the night, illustrate 'the dark ages.' And the families (*Plusia* and *Noctua*) ornamented with Greek and Hebrew letters on their wings, may represent the cultivation of these languages in the middle ages, which contributed so much to the enlightenment of individuals, and may be compared with the gold and silver characters which shone in the manuscripts executed at this period of obscurity. The cultivation of these languages, and the illumination of works in them with gold and silver characters, was pursued amid the gloom of convents and monasteries. These slumbering embers of light prepared the minds of men for the reception of the clearer daylight of truth."

The Greek and Hebrew languages were, as far as we can tell, in a few instances studied by the small modicum of the learned in the "dark ages"; but, if we are to believe the accounts of some Roman Catholic writers, we shall have to change our opinion about this mediæval gloom, and should rather look back with envy to the "dim religious light" of those "departed joys, never to return."

Of all insects, none perhaps are more useful, certainly none so important commercially as the class Bombyces, containing the silk-

worm. The wonders of the insect world far exceed those of any branch of the lower animal world ; and it is truly wonderful how the ant, the bee, the moth, and the beetle, illustrate almost every phase of man's life and doings here below. And in their transformations even carry this illustration above the world altogether. The more we contemplate this, the more passing strange it is, and does not need a poetical fancy to convince us of its reality. We do not know how the advocates of "progressive development" explain the fact, that ants, especially, show an amount of intelligence, if we may so term their instincts, far greater than the higher mammalia. Where can the space be in their small heads for their extraordinary mechanical ingenuity, and, higher still, their co-operative faculty? Unlike the sun-loving butterfly, the more useful bombyces fly between the dark and light. In the following paragraph Mr. Napier describes the most striking characteristics of some of these remarkable species, and compares the different stages with the present and future life of man (p. 147).

"The humble silkworm illustrates a man's phase of life. Like the child, in its early stage, it does little else but eat, and only stops to change its skin or clothing. When it has eaten its fill, it longs to do something for posterity. Its silken covering, wrought with so much care and labour finds a place at court ; among the streaming banners of victory ; the pageant of holiday or the parade and mockery of mob law. It rustles through many a noble hall or church aisle, and its cracked voice, escapes from the electric machine. The caterpillar may well labour for such a reward ; the man may well work with him for such wages ; but the man alone can fully appreciate a compact, he alone can sound the depths of the moral law. Viceroy of the Organic Kingdoms, he on behalf of his subjects pays wages and receives debts. The reward of works is various ; it may be immediate ; it may be deferred. It may blast from a trumpet, it may be unobtrusive, perceived by few, but the giver and receiver ; it may benefit the individual or his posterity. Such a reward should satisfy the hard working man, who perhaps spins all day in a dull corner ; he is not working for himself alone, he is contributing his quota to the market of labour, and sooner or later it will be rated at its value. With the eye of faith or imagination, he sees his work done, the fruit that springs from it, and in the happy dreams of the tired labourer clasps the reward."

In the chapters of this work on birds, types of all the great divisions are taken up and viewed in order, as illustrating the various classes among men and the different countries which they inhabit. There is a great deal of dry and subtile humour in many of the author's similes, and a good deal of sharp sarcasm in treating of the characters of individuals and classes in society, especially in civilised life. Lord Brougham says, in his preface, "I see he makes some re-

marks on the Lord Chancellors, I hope he does not intend to be personal." If Mr. Napier is not personal, he is sufficiently caustic on classes of mankind, and in the case of poor Boswell, whose memory is used to this kind of treatment, he brings in the well-known anecdote of the old parrot of Atures, on which some pretty lines are quoted in Humboldt's "Views of Nature."

"The most remarkable peculiarity in parrots, consists in their admirable power of imitating the speech of man ; which is not however given to all species, or even to all individuals of a species in the same proportion. We have an instance in the pathetic story related in Humboldt's 'Views of Nature,' of how the unfortunate tribe of Atures' language, was preserved by an old parrot, after the tribe had for ever perished. An instance of what an humble imitator, an eavesdropper, a creature insignificant in itself, may be the means of doing. A nobler creature might be too unbending to stoop to this. Such was Boswell, who did for Johnson's memory, what the parrot of Atures did for its dead master ; it preserved his language. The species tamed by Johnson, in that idiom dog latin, is the *Boswellia Parrottii* of *Canis*."

The colours of the beaks and feet of birds, and the complexions of the inhabitants of certain districts of our country, are curiously traced in the observations on the chough. (p. 220). "The chough is a red-billed, red-footed bird, with black feathers ; reminding us of some of the Welsh and Cornish complexions, which are very pink, and accompanied by black hair. They form a considerable contrast to the persons with black hair and yellow skins ; whom we have formerly compared with the blackbird." Most persons will look on these resemblances as coincidences or mere accidents. But the ingenious principles of this book—if true—point to a far deeper and more unvarying rule than mere accident. In fact, can we truly say that anything is *accidental* ? Resemblances and analogies may be apparent to some minds and not to others, for more reasons than one. There may be much fancy on the one side, or great want of acuteness on the other, but there must be reality somewhere, and it is worth consideration whether such analogies are mere poetic fancies or ingenious accommodations of one thing to another, or whether there is a deep and universal principle of union, running through all nature and connecting everything together ; those links which are closest, being the strongest. Birds and some quadrupeds are not less addicted to change of residence in summer or winter than are the wandering tribes of North America, who seek the climate they most enjoy at these seasons. Some tribes love to wander over the sea, others over the vast steppes of Asia or wilds of the New World. All things have their times and seasons, and man's life naturally divides itself into four great periods,

truly often so running into each other that the boundaries are lost. A lack of food is the stimulus in most cases, though health and even life may depend on seeking a climate, whose genial warmth infuses the energy needed, to sustain the powers, whether in man, bird or beast. Speaking of birds, Mr. Napier says :

“These different migrations remind us of emigrations amongst human populations ; whose movements are also influenced by the supply of food. The roving habits of some quadrupeds well illustrate those of nomad nations, who do not cross the seas : and the passage of birds the emigrations of human beings to countries beyond seas. Man migrates in his youth, his ‘summer of life’ to some northern country which has great resources, and in his ‘winter’ having fulfilled ‘his mission,’ he returns to the south. Men born in the north, though settled in the south, pant for their native air, which they must respire if they would recruit their strength. In like manner many birds re-visit the place of their birth. These different changes from one climate to another, are favourable to the increase in numbers and prosperity of man and animals.”

On the very important subject of Temperament, Mr. Napier makes frequent observations in the different sections of the work. That there is a quality belonging to man, and even to lower animals, which influences the whole being physical and mental, is pretty generally accepted by the learned and unlearned. In what this consists has been hitherto little known, and it belongs to the class of realities, which all feel, and few if any can explain. We judge of it from its effects on the *man* and its influence on society. This writer, so far as we are aware, is original in his observations on the Temperament of Vegetables and Insects. “Colour is equally significant of qualities in other divisions of organisms. Amongst plants as amongst horses, an analogy with man’s temperament is found. Red apples have mostly a sharp flavour, as have red currents, berberries, and many other red fruits. Black fruits have an intensely strong flavour, as black currants, black grapes, and black elderberries. Very light-coloured fruits, as white-heart cherries, white currents, and light-coloured plums, have a more delicate flavour than the red or black of the same family. Yellow fruits are commonly sweet and luscious, with less flavour than red or black, as, for instance, yellow gooseberries, yellow plums and yellow apricots, for the best flavoured apricots are streaked with carmine. The sweet rich and sustaining grain is golden, as is the basis of our nation’s credit. These various colours point to the various qualities of the fruits of the earth, they are not less significant of those of the sons of Adam, red-haired races are fiery and impetuous, and have strongly-marked qualities as in red-skinned peoples. Black-skinned races have likewise intense peculiarities, and their types are usually extremely permanent ; how difficult is it,

for instance, to eradicate traces of negro blood: one drop of ink will discolour a glass of clear water." And in writing of the colour of insects and higher forms of life he says, "The colour brown in insects, the higher animals and man, is the accompaniment of great vigour and endurance; as in bees, ants, dark chestnut horses and human Arab races. Red represents the fiery and hot-tempered in insects, horses, and red-haired people. Black represents sharpness with a great deal that is restive and a considerable impatience of control, with as great activity, but with less vital force than red. This is especially true of black insects, fowls, horses, and human races. (p. 310-311). The mental temperament, (Mr. Napier says, p. 309), can hardly be said to *predominate* in any animal but man." The mixed temperament, in which qualities are pretty evenly balanced, he considers the best in man and beast.

Colour, Mr. Napier considers was formerly more largely significant of qualities in horses than it is now. And of man, "the terms 'black' 'white,' and 'red,' meant more anciently than they do now; when in the infancy of racial types the blending of stems, the grafting of branches, the conglomeration of the divers coloured sons of clay was unknown." Hair, skin, and outline of form are all given as indications of temperature; but we have not space to enlarge on this great subject. It is interesting to trace the degree of attention given to the breeding and training of the horse in various reigns of the British Sovereigns, and to see how man has influenced this animal so as to conform him in no slight degree to his wants and wishes. Scarcely less interesting are the paragraphs on the cattle and sheep of various countries.

Mr. Luke Pike, F.A.S.L., in a paper "On the Claims of Woman to Political Power," *Journal Anthropological Society*, Appendix 1869, said "Chemistry illustrates the subject (of mind) better than any other science." Certainly, Mr. Napier holds this opinion very strongly, for he has devoted a good many pages of his present work to point out the analogy between the faculties of the brain and the elements discovered by modern chemists. He is a phrenologist, and therefore sees in these elements qualities answering to what he calls the primitive faculties in man. The old-fashioned "four elements," he compares with the four temperaments. He says, "the four temperaments of man are all comprised and included in the organisation of the faculties of his mind. They indicate his temperament *exactly*; and with far less precision—it exhibits the proportion in which he possesses all the faculties common to man."

A further part of this subject is a review of the metals, with their value and qualities, as indicative of the mental and physical constitu-

tion of man. The paragraph on Iron will remind most persons of old ideas and phrases, which are so familiar to us, as to have passed into proverbs; but which nevertheless, are only the more striking when brought together and placed in this new light. "Iron being one of the hardest and most tenacious of metals has long been accepted as typical of what is strong-willed, enduring, vigorous and sustained in the human constitution. If iron is a type of firmness, carbon is of the combativeness which supports firmness in its determined course, 'steeling' it against the action of other faculties. Steel is an even more enduring metal than iron, and being much harder, cuts through life better, combativeness must be combined with firmness in the hero of the great battle of life. Steel or iron is the metal used for balances, knives, weights, swords, cannons, and guns. Typifying justice, division, decision, execution, and the vengeful tongue of the destroyer. Men in whom the bilious or fibrous temperament predominates have often an 'iron-will,' and a complexion like the brown oxide of iron. These persons have muscles of such strength and toughness that we compared them with wrought iron; they are popularly called wiry. Iron is almost exclusively worked with tools of its own metal. Those of other metals make no impression on it, in like manner 'iron-willed men' can alone control, or aid in reducing to subjection those of similar character."

Lord Brougham says in the preface, "The author has strode the gulf between physics and metaphysics, mind and matter, instinct and reason, God and man; for his scheme of reconciling the Mosaic narrative with Modern Geology possesses advantages over those of his predecessors." And Professor Huxley, in his address before the Geological Society for 1869, says, "I conceive Geology to be the history of the earth in precisely the same sense as biology is the history of living beings," and says, "I trace a close analogy between these two histories." Mr. Groom Napier views the Mosaic account of creation as essentially typical for "what can be, may be; what has been, will be; what it has been before either in fact or in type. Therefore, we think the so-called geologic ages before the creation of man, and the seven days of creation mentioned in Genesis 1, which succeeded them, to be types of one another, and of the different ages in the so-called 'historic period,' which we believe to have commenced with the life of man on earth." He does not attempt to settle the *length* of these ages, neither does he attempt to calculate the age of the world. He holds the view of the unity of the human race, and the universality of the Noachian Deluge. He exposes the fallacy of the belief that "the ark" could have contained all the species of the globe, and shows the impossibility of the birds, insects and various classes assembling from every different

region of the world. On the other hand, he says, "The geologic evidence for a partial deluge has never been conclusively established in connection with any special *locality*. The animals of various classes and species must have been let loose upon a land fitted to receive them. Green with herbage for the Herbivora, and abounding in animal life for the Carnivora. In fact, a fauna and flora re-created and arranged for them." Re-creation is a necessary hypothesis, unless we suppose that the earth was a sterile waste when Noah went out of the Ark : *for vegetation cannot survive submersion for many months in salt water*. If we accept the view held by Hugh Miller and other geologists of a partial deluge and preservation in the ark of the animals of a particular district, still *re-creation* is involved as necessary for a provision of sustenance for a carnivorous and herbivorous population."

So we see that, according to our author's view, we must either accept his bold hypothesis or reject the deluge altogether as a thing impossible while the world was inhabited by man, animals, and even vegetables.

There is nothing more striking in this book than the rapidity of ideas, and the connecting together things from the remotest places, whether concerning time, space, thought, spirit, or matter. In fact, his analogies are subtile, and his comparisons will by some be thought "far fetched." His humour, which is perhaps more apparent in the chemistry of the mind than elsewhere, is not of the modern school. It is free from "slang;" but it turns sometimes on similarity of sound in words; yet even here is not without sense, and his puns—if such they may be called—generally involve some philosophical truth. Many sentences are alliterative, and their general effect is melodious.

It is needless to say he is no "materialist" in the common acceptance of the word; but he is no less at home in physical than in mental science, and his pages may be summed up as containing *multum in parvo*.

This work appears in three forms: a plain cover distinguishes the first; the second is elegantly bound; and the third or photographic edition contains some hundred photographs in addition to the numerous beautiful wood-cuts. Many of the photographs are from nature, and are amongst the most beautiful we have seen. The book is of the prettiest and most tasteful description as to "getting up," and the photographs of birds' nests and lower forms of life, are, we think *unique*, nothing similar having hitherto appeared in any work of Natural History. Every copy contains at least four of these photographs. Among the photographs in the book is the *chef d'œuvre* of the Royal Academician Baily, "Eve at the Fountain," now published for the first time. The botany is illustrated by views of the most

famous trees. The geology by nearly one hundred beautiful figures of fossils, which surpass anything of the kind hitherto attempted in photographic book illustration. The picturesque is not forgotten, for there is a very fine full-page view of Tintern Abbey, and numerous other lovely bits of landscape scenery, which photography alone can do justice to.

DESCRIPTION OF THE SKULLS OF THE INHABITANTS
OF THE HIGHLANDS OF PALEMBANG
(SOUTH SUMATRA).

BY DR. C. SWAVING. (A Letter to Dr. J. Barnard Davis.*)

DR. CORNELIUS SWAVING has lived many years in the Indian Archipelago, being the First City Physician of Batavia, in the island of Java, the populous capital of the Dutch East Indian possessions. In this city, he has under his superintendence different public institutions, especially a large lunatic asylum. He has long been an active and zealous skull collector. The Anatomical Museum of the University of Leyden, that of the Medical Institution of Rotterdam, all the private museums of his own native country, and many others in foreign lands, owe their specimens of crania from the Indian Archipelago mainly to him.

Dr. Swaving's previous writings are various—medical, biographical, and others; but those upon craniology are believed to be the following: *First Contribution to the Knowledge of the Skulls of the People of the Indian Archipelago*, 1861. This consists of an Introduction; a Description of Fourteen Crania of Banjarese of Borneo, with table of measurements and a beautiful plate; a Description of Seven Skulls of Dayaks of Borneo, with table and plate; and Table of Measurements of Twenty Javan Skulls. As Appendices to and continuation of this memoir, there appeared another Table of Measurements of Fourteen Skulls of Insane Sundanese from Western Java; a Description of Three Skulls of Dayaks, with a plate of one of them; on the Skulls of Eight Buginese, with a plate; Six People of Macassar and four Menadnese, all inhabitants of the islands of Celebes, with Six

* Beschrijving van Schedels van inboorlingen van de bovenlanden van Palembang (Zuid Sumatra). *Kon. Nat. Tijdschrift*. Deel xxxi. Batavia, 1869.

Tables of Measurements. Lastly, *Some Observations upon the Sumatran People*, 1863.

The present memoir upon the crania of the mountaineers of Palembang is accompanied with a fine double plate, showing two of these skulls, which are hypsistenocephalic. Besides which there are fourteen elaborate tables of measurements. These are according to a system of the author's own ; and embrace a large series of skulls of the people of the interior of Batavia, other races of different districts of Java, of Madura, of Bali, of Celebes (Macassar, Buginese, and Menado), of Amboyna, of Ternate, of Ceram, of Timor, of New Guinea, of Borneo, of Flores, of Sumatra (Padang, Nias, Battak, Deli, Riow, Lingan, Lampong, Palembang, Bencoolen, the Highlands of Palembang), of Negroes, of Arabs, of Siamese, of Chinese, of Philippine Islanders, of Hindoos, and of Malayo-Bengalese. These numerous measurements have been a work of considerable labour and time, and will be very valuable when compared with the measures taken by others. These tables constitute the richest metrical contributions hitherto made in illustration of the crania of the Indian Archipelago.

The author begins his essay with the remark that, in his *Observations upon the Sumatran People*, he pointed out that there is one race among the inhabitants of the Residency of Palembang whose skulls differ from those of Malays, Sundanese, Javans, Madurans, and other people in the Indian Archipelago ; and that it is his present intention to describe the crania of this people.

According to the excellent Professor H. Welcker, in his craniological journey through Germany and Holland, 1864, he met with only twenty-seven skulls from Sumatra, in twelve cabinets. In the *The-saurus Craniorum*, there is mention of sixteen Sumatran skulls. To the present time eighty skulls of Sumatrans have come under the eyes of the author, of which fifty specimens remain in his collection, partly at Leyden and partly at Batavia. Had it been his intention to write fully on the crania of the different races of Sumatra and the adjoining islands, he would have deferred this communication for some time, till a period of leisure. It might then, with accumulated materials, have appeared that there exists a difference among the people—as between their languages, so among the forms of their skulls.

The languages of Sumatra are very remarkable. Marsden observed that it is strange, and perhaps unknown elsewhere in the history of the development of man, that people of the same island and of the same origin, in nearly a like grade of civilisation, and speaking tongues which must have been derived from a common source, should use

languages which differ from one another even as they differ from all other tongues in the world. Still more, as Dr. Swaving remarks, that upon the islands along the south-west coast of Sumatra, excepting, perhaps, Nias, there are languages which have no alphabets, and which all differ from those of Sumatra. This is a case almost parallel with that of the extraordinary diversity in the animals from those of other islands, indeed of the separate islands, in the Indian Archipelago in general, according to that accomplished naturalist, Mr. Alfred Wallace. Besides the quadrupeds, too, even closely adjoining islands frequently have their own birds, which do not pass over narrow straits. These are facts which appear to be quite contradictory to modern zoological doctrines; still, with machinery large enough, their disciples seem to effect a reconciliation. A series of geological changes—subsidences and elevations of vast tracts of land—producing differences and resemblances among languages, would hardly be regarded as a sound argument in the latter case.

Among the peoples of Sumatra and the surrounding islands, there are no original Nigrites, red-black men, with frizzled woolly hair. In the ethnographic anthropology of Sumatra, there still exists much confusion, since many writers characterise the inhabitants of the island, without any reasonable ground, by the general name of Malays. Malay is the *lingua franca* of the rulers, traders, wanderers, and settlers, who have settled down along the coasts of many islands of the Indian Archipelago. By this means, the corruption of this language, the Italian of the East according to Marsden, is very great. The Batavian Malay would not be understood in the Highlands of Padang, Menangkabo, upon the peninsula of Malacca and Quedo, and *vice versâ* the Malay there spoken would not, in the rule, be understood here—*i. e.*, at Batavia. Mixed descendants of Europeans, Chinese, Africans, Arabs, Macassarese, Buginese, Balinese, Dayaks, etc., educated in inland places, where Malay is exclusively spoken, at a riper period of life come to be regarded as Malays, whenever they follow the customs and usages of the latter.

The covering of the head, its long hair, which ranges in colour from chestnut-brown to jet black, the filed or sawn teeth, the betel in the mouth, the brown colour of the skin, varying from light yellow to dark brown, and sometimes, by the influence of the burning rays of the sun, to brownish-black, the deportment, the undeveloped appearance from the want of evolution of the spiritual life, the clothing, the circumcision—all these, taken together, cause the half-breed to pass for a Malay, although very little, or even no Malay blood flows in his veins. From this we must not admit the epithet Malay in the catalogues by any means literally. They are sometimes even

less Malays than the inhabitants of the islands on the south-west coasts of Sumatra, or than those people who dwell in the interior of Borneo, or Ceram, who know no Malay tongue, but have taken up a few or many Malay words.

Whether all the people of the islands, from Madagascar to and including the Philippines, as well as the South Sea islands of the Pacific, are to be brought to the Malayo-Polynesian race, will, without doubt, be denied; for, even exclusive of the Negritos in the Philippines and the Papuans of New Guinea, I cannot perceive any unity among all the different races. Malays, Polynesians, and Australians, have here and there mingled, yet the types of the transitional forms are to be discerned. A Malay is strictly, according to your opinion, a descendant of the people of Menang-Kabo, who have spread or established themselves upon the peninsula and along the coasts of Sumatra and through the whole Indian Archipelago (*Thesaurus Craniorum*, p. 273). For a comparative craniological investigation, strand-dwellers may lead to misunderstanding, just as it clearly appears from my skulls of Batavia and Padang; and, therefore, it is agreeable to me to be able to direct your attention to the skulls of people who were born in the Highlands of Sumatra.

"The number of skulls included in Table XI amounts only to seven of men; but, besides the high and narrow cranium which occurs in No. 2 of Table IV of my *First Contribution*, I saw at Groningen, in 1864, a skull from Sumatra, which likewise possessed the hypsistenocephalic form.

"It is not alone from the skulls that I have come to the conviction that hypsistenocephalism occurs in the Highlands of Palembang, but also by the inspection of many people derived from those lands whom I have met with here in 1862 and since. I wrote, in December 1862: 'The temples were in them (three Redjang men, with short-cut hair) flat, the crown high, the cheek-bones broad in comparison with the forehead. The great length of the occiput was evident.' So that it was with especial interest that I became acquainted with your treatise, *On the Peculiar Crania of the Inhabitants of certain Groups of Islands in the Western Pacific*, 1866. On reading this important contribution, I came to the full conviction that the hypsistenocephalism of the archipelago of the New Hebrides occurs also, in a certain degree, in the highlands of Palembang, in Sumatra."

It would be difficult to follow Dr. Swaving through the remainder of this letter without translating almost the whole of it. The reader will already perceive that it is his object to show that the mountaineers of Palembang are hypsistenocephali; and he considers that they may be derived at a former period from the Mantani Islands, which are

small islands situated on the western coast of Sumatra. In support of this view, after giving an account of the origin of his Palembang crania, he goes into various subjects of much craniological interest, which can only be briefly alluded to here. He says the highland skulls have an oblong form, and are at once distinguishable from those of Lampong, Bencoolen, and the level regions of Palembang, and from those of Pedang. The mean circumference amounts to 523 *millimètres*. This mean, and the internal capacity of these skulls, are the greatest met with among the Indian people. The mean horizontal circumference, among forty-four other Sumatran crania, amounts to only 502 *millimètres*. The greatest circumference met with among three hundred skulls was observed in an inhabitant of the rich clove producing island of Saparua, on the east of Amboyna. It amounted to 550 *millimètres*.

In thirty skulls of German men, Professor Welcker found the mean circumference to be 521 *millimètres*, with a capacity of 1440 cubic *centimètres*; and where the mean circumference was 523 *millimètres*, derived from five of the skulls, the capacity was 1426 cubic *centimètres*, whilst in our five mountaineers of Palembang, with this mean circumference, they have an internal capacity of 1544 cubic *centimètres*—*i. e.*, a difference of 108 cubic *centimètres* in favour of the Palembang highlanders. Dr. Th. Landzert, of St. Petersburg, found the mean of forty skulls of Great Russians to be a circumference of 511 *millimètres*, with a capacity of 1471 cubic *centimètres*; and in a circumference of 523 *millimètres*, in ten of the largest skulls, a capacity of 1636 cubic *centimètres*, which is 92 cubic *centimètres* more than in the mountaineers of Palembang. It appears that between the Great Russians and the Germans there exists, in a mean circumference of the skull of 523 *millimètres*, a difference of 200 cubic *centimètres* in internal capacity, to the prejudice of the latter. “I here think of the skull of the Lepcha, which, with a circumference of 533 *millimètres*, had a capacity of only 1255 cubic *centimètres*, whilst a normal Lepcha skull, having a circumference of 513 *millimètres*, exhibited a capacity of 1434 cubic *centimètres*. The last weighed but 679 *grammes*, the former 1676 *grammes*.” (Dott. G. Bernardo Davis, *Memoria sopra un Cranio Lepcha dell’ Imalaja affetto da Iperostosi*, 1867.)

So far the five mountaineers of Palembang stand above all other Indian people—even above the Chinese; but to deduce a general conclusion from five observations would be great presumption, especially when it is known that Nos. 1, 3, and 4, as well as 6, have belonged to one or another popular agitation. The people, in the rule, choose the tallest, the strongest, and the bravest, to be the head, or to be obeyed.

After many minute observations upon the measurements of the skulls of the Indian Archipelago and others, and a carefully prepared table of breadths and heights of a large number of skulls, in their relations to their respective lengths, the author proceeds to an elaborate description of the skulls of the mountaineers of Palembang, to which the reader can only be referred.

The whole of Dr. Swaving's letter is of great value to craniologists, as it is a carefully wrought treatise upon the peculiarities of the skulls of the numerous peoples of the Indian Archipelago, by one who has had much more experience and means of observation than any anatomist who has gone before him, one who has turned his opportunities to the best account.

One of the author's notes is curious, as it refers to a rare cross between a Dayak and a Negress. He says : "Negroes produce, with Malay and Javan women, children with woolly, soft, curly, and smooth hair. Lately, I saw a Dayak with a Negress, by whom he had four children, two with lank and straight black hair, and two with woolly hair. Upon the crown of the head of the Negress there was long, spirally twisted hair, and on the horizontal circumference frizzled woolly hair. This Negress was taken as a child by a hadjee on his journey to Mecca, and brought back to Borneo, where she was married to a Dayak, and converted to Islam by the priests. The true Malays have, as a rule, smooth undulating black hair, as well as the Javans." Dr. Swaving does not say this was an African Negress. It might be asked, was she a Negrito?

OCEANIC RACES, THEIR HAIR, ETC., AND THE VALUE OF SKULLS IN THE CLASSIFICATION OF MAN.

BY J. BARNARD DAVIS, Esq., M.D., F.R.S., F.S.A., etc.

IN the January number of the *Anthropological Review* for 1866, (No. XII, vol. iv, p. 47), there is a notice of the late Professor J. Van der Hoeven's "Description of the Skulls of the Inhabitants of the Caroline Islands," to which are appended a few remarks upon different subjects, with a view to explain and illustrate these skulls a little further. The first, second, third, and fourth notes were designed to point out a singular form of cranium, hitherto undescribed, which I

believe to belong to the people of this portion of the Pacific, not universally, but more commonly than to any other race of mankind, and which I designated hypsistenocephalic.* The fifth note alluded to the queries, whether the hypsistenocephalic races are any of them Papuan, and whether the term Papuan is, or should be confined to those species of men, who are distinguished by having the hair not growing equally spread over the scalp, but, in tufts, with bare spots between. The conclusion was "that the name Papuan is not confined solely to races with tufted hair; and that hypsistenocephalism has no connection either with Papuanism, or with tufted hair."

In writing upon such a subject, I believe, I said nothing in a dogmatic tone, for I merely gave the results of my reading and examination of crania. I have never been in the Pacific, and never had the opportunity to examine its various and curious Islanders. The matters descanted upon are of much interest, and the opinion of anthropologists on them can scarcely be said to be settled or uniform. The great want still is fresh observations, made by men whose minds are unwarpd by any prepossession or hypothesis, and who shall have had the opportunity of deliberately, patiently, and fully examining the phenomena exhibited by these Islanders in the regions in which they live.

In the latter end of the same year, 1866, appeared Mr. W. T. Pritchard's *Polynesian Researches*. In this interesting work, Mr. Pritchard gives an account of his early life in Tahiti, where he was born; of the Samoan Islands and their inhabitants, where he resided with his father, who was British Consul; and then describes his own career in that capacity in the Feejee Islands.

In the last chapter of this volume, entitled "Polynesian Anthropology," he announces the results of his personal observations during a course of fifteen years, which chiefly embraced Fiji, Tonga, and Samoa, with the contiguous Atoll grouplets. At the outset, he states that "the people who *now* inhabit these three groups are more or less mixed races, though originally they were *unquestionably totally distinct*." This is an important opinion. He says, "the Samoans and Tongans are Malays, the Fijians Papuans. Before going into an enumeration of the various legends and traditions of the Polynesian Islanders, to which Mr. Pritchard attaches considerable importance, he enumerates in the following passage the distinctive physical characters of these people. "Fiji is especially remarkable as the group where the black

* The subject of these remarkable skulls was much more fully elucidated in a monograph, "On the Peculiar Crania of the Inhabitants of Certain Groups of Islands in the Western Pacific," to which are added three plates. *Transactions of the Dutch Society of Sciences of Haarlem*, 1866.

and the copper-coloured races—the Papuans and the Polynesian-Malays—come into immediate and direct contact, and more or less assimilate by intermixture. The skin of the pure Fijian is dark, rough, harsh. His hair, naturally black and copious, is bushy, persistently frizzled, almost wiry, indeed, it seems something between hair and wool. His beard, of the same texture, is equally profuse and bushy, and is his greatest pride. His stature is large, but somewhat less than that of the Tongan and Samoan; his muscular development is more perfect, while his limbs are less rounded, and his figure generally slighter. His eye is restless, his manner suspicious, his movements light and active. The skin of the pure Tongan or Samoan is a dark *reddish-brown*, smooth and soft. His hair though naturally black and copious, is coarse, seldom wavy, generally straight. He is almost beardless, and abhors a hairy chin. His stature is herculean, his limbs well rounded, his figure symmetrical; his manner is quiet and confiding, his actions pre-eminently graceful; his eye is soft and subdued, and his movements, lacking energy and quickness, are deliberate and stately. A comparison of the profile of the Fijian with the profile of the Tongan or Samoan, shows that the former is more prominent than the latter, and the forehead higher and more expansive." (p. 377). It is worthy of notice how very closely this agrees with Mr. Alfred R. Wallace's contrast between his Malays and Papuans.* The chapter closes with a number of instances of the drifting of canoes, and thus the involuntary migrations of the inhabitants of the different Polynesian Islands.

Perhaps the most important anthropological portion of this volume is that contained in its appendix. Appendix A is on the "Physical and Psychological Condition of the Inhabitants of Viti, Tonga and Samoa." In this essay we perceive the philosophy of the writer to be that the natives of these islands are capable of being vastly and indefinitely improved, of being "civilised," of being converted to Christianity, and that such changes produce or are coincident with some amount of alteration in their physical organisation.

He begins by saying that the chiefs are finer looking men than the commoners; intellectually and physically they are superior, the contour of their features is more striking, more definite, *the skull altogether larger*. "The true cause of the intellectual and physical superiority of the chiefs is in the fact that as leaders, their mental faculties are more continuously active than those of the commoners." The fact that the stature and appearance of the chiefs are superior to those of the commonalty has been affirmed by Captain Cook and

* *The Malay Archipelago*. By Alfred R. Wallace. Second edition. Vol. ii, p. 103.

others. A Continental writer upon the Indian Archipelago, attributes the same fact to the mixture of Arabian blood, at a remote period, in the families of the chiefs. Mr. Pritchard makes the same statement with respect to the Polynesian priests, and explains the phenomenon in a similar manner. But when he comes to speak of what he considers he has seen, it appears that he is mainly relying upon theory. He says: "Take a Samoan, born under the improved associations and influences, educated at the Missionary Institution at Malua, where mental development is facilitated by withdrawing the pupils from the old associations and influences, and domiciling them within the precincts of the college grounds, where their energies are further stimulated by competition and contrast with each other—compare his skull with the skull of a Samoan born and reared under the old associations and influences; an incipient difference in the form of the cranium is just perceptible. The cranial capacity of the former is just appreciably greater than that of the latter," p. 415. This passage shows that the asserted alteration in the form and size of the cranium is nothing more, at most, than the impression produced upon the author's eye. It is not a fact deduced from actual and accurate observation by measurements, etc., but is an appearance estimated by a glance. The validity of such an appearance, even if seen by others, cannot be regarded as of any great importance. Those who have devoted their efforts to determining the size and capacity of the skull, will know that no reliance is to be placed upon a mere visual estimate—that the eye may easily be misled, and that the worth of observations of this kind is very small indeed, unless based upon very careful measurements. The author further proceeds: "The crania of the *children* of the natives born and reared under the improved moral and intellectual condition, when these children (the second generation under the new development) are themselves under the direct and immediate force of the new associations and influences, especially in the missionary connections, show a yet more appreciable improvement of capacity than the crania of their parents. In the next, *the third generation*, the metamorphosis will, I think, be positive, definite, and unquestionable." (*Ib.*) The showing of this appreciable improvement of capacity has a very airy and unsubstantial foundation. Notwithstanding, it may be readily allowed that such an improvement, as we consider it, would be very acceptable and gratifying to our notions respecting ameliorating influences moral and intellectual. It only wants to be proved, not to be assumed, for it would be joyfully accepted by all. No doubt it perfectly corresponds to the author's high appreciation of missionary labours. But what are we to say of other groups of Polynesian Islands, where missionary labours have been going on for ages, and from

the pliant disposition of the islanders have been considered to be pre-eminently successful. Have the Sandwich Islanders, at one period so numerous and so finely developed, been improved physically and morally in such an obvious and striking degree as we might reasonably have expected, if the hypothesis of the author had been true? Able and intelligent observers, who have been long residents in these islands, speak only of both moral and physical deterioration concurrent with the conversion of the natives, and, what is quite consonant and notorious, is the fact of the steady and rapid decay of the people, and the depopulation of the islands to a degree that is quite appalling. With a knowledge of such facts, which are by no means confined to the Sandwich Islands, every reflecting person must entertain a doubt whether the "civilising," which really and only means the diffusing of *our* European notions and customs among these primitive people, in the place of their own, and conversion of these islanders of whom Mr. Prichard writes, may be attended by their physical development and their moral amelioration. Looking upon missionary efforts among aboriginal races, both catholic and protestant, in various parts of the world, it may be safely said that they have singularly failed. And the question may be asked, with all respect to Mr. Pritchard, has he given us such data as to ensure a reasonable and justifiable hope that they will have a happy and successful issue in the Samoan, Tongan, and Feegeean Islands? We *fear* he has not.

At the conclusion of this Appendix A, Mr. Pritchard enters upon "the interesting study" of the fusion of races and of half-castes. From his observations and remarks, it is apparent that the effects of intermixture of blood are very prone to die out, and that there is no reasonable hope of the production of a new race by the intermarriage of the half-castes. The progeny ceases to be fertile at an early date. This is confirmatory of all we know of the essential and irreconcilable diversity of human races.

We now come to Appendix B, which is a repetition of a communication already made to the *Anthropological Review*, No. XIII, April 1866. This it is more particularly our object to consider. It is entitled "Hair and Crania."

Here Mr. Pritchard sets out with some remarks which are at variance with what former observers have taught us. He does not speak in positive terms; but it is apparent that he regards it as a mistake that any of the natives of the Pacific Islands have that peculiar kind of hair which grows in "separate spiral tufts", with bare spots between. His words are: "The allegation, which has found favour with some ethnologists, that the hair of certain islanders of the Pacific (variously described as Oriental Negros, Negrillos, Negritos, and

Papuans) grows not equally spread over the scalp, but in tufts, with bare spots between, is one which I very much question. So far as I have been able to learn, the hair grows spread equally over the scalp; and I think it will be found that the 'separate spiral tufts' are directly the result of an artificial process" (p. 425). If this be really correct, it would seem that the separation or segregation of the tufts of hair upon the heads of many of these people, which has been spoken of by Mr. G. Windsor Earl and many others, is merely an artificial result of their mode of dressing the hair. Mr. Earl, who was a personal observer, expresses himself quite distinctly. He says: "The Papuans have very few characteristics in common with the brown coloured races of the Indian Islands, but their most striking peculiarity consists in their frizzled or woolly hair, which does not spread over the surface of the head, as is usual with the negroes of Africa, but grows in small tufts, each of which keeps separate from the rest, and the hairs, if allowed to grow, twist round each other, and form spiral ringlets. Many of the tribes keep the hair closely cropped. The tufts then assume the form of little knobs, about the size of large peas, which give the head a singular, but not altogether unpleasing, appearance; for the regularity of these little knobs is so great, that the first idea which strikes a stranger is that they have been produced by a stamp."*

Mr. Pritchard even goes a step further than this, and is inclined to assure us, as the result of his observations, that all kinds of human hair may be trained to present the appearance of the hair of these islanders—*i. e.*, either the separate spiral tufts or the mop-fashion. That the Tongans and Samoans whose hair is straight, not in the least degree crisp and woolly, can by culture reduce their hair to the separate spiral tufts, "looking as if they grew naturally, and there seemed to be bare spots between them."

The subject itself is a curious one, and deserves further investigation, but if Mr. Pritchard's positions are correct, the notions hitherto entertained by anthropologists are quite unfounded, and there could scarcely be anything to prevent a Chinese or a North American Indian presenting himself to some future inquirer with a mop-head, or one with separate spiral tufts and bare spots between them. This view of so high an authority as Mr. Pritchard, may do much at least to unsettle the confidence of anthropologists in these peculiar kinds of hair. We certainly *know positively* that some of the races of South Africa, as the Hottentots and Bushmans have hair growing in separate spiral tufts which have bare spots between apparent to everybody. It is also well known that the hair of these people has a particular confor-

* *Native Races of the Indian Archipelago: Papuans*, p. 1.

mation ; it is very fine and *eccentrically elliptical*, or flattish, like that of the beard and pubes. Upon this quality it is that its excessive curliness depends. And it is also equally well known that some of the Pacific races possess hair of exactly the same structure. *Cylindrical* hair like that of the Chinese and North American Indians might possibly be induced to curl, but it is most likely that a pair of hot curling irons would be indispensable to give it the twist which would not be permanent, but soon effaced. Mr. Pritchard admits that the Samoan hair which he has known to undergo the process that renders its appearance to be that of separate spiral tufts with intervals between them, is naturally *flowing*, therefore will have some ellipticity in its section. He says, "I have observed that, the more crisp and woolly the hair, the longer it will retain the separate spiral tufts after they are artificially produced."

But my chief object is not to throw discredit upon the affirmations of Mr. Pritchard, which I have no right to do, as I cannot use the language of an observer, except as to the structure of the hair itself, but to lay before the readers of the *Anthropological Review* the statements of an experienced observer, who has spent many years in the Pacific, and visited many of the Islands in which the tufted hair occurs. This I am enabled to do in consequence of having recently received a letter from this gentleman, whom I regard as a very competent authority.

Let us hear what he says, first as to the form of the skull, and then with regard to the character of the hair. These are his words, speaking of the natives of Faté or Sandwich Island in the New Hebrides : "The heads of these people are certainly remarkable, long, narrow, and high. I have never seen elsewhere in Polynesia so exaggerated a form of this type. I have some of these people often about me, and never fail to arrive at their nationality by examining their hair. The generality of the natives in Fiji, and I believe most islands to the westward have hair growing in tufts, not twisted by art into tufts, but clearly growing in tufts, with well marked intervals, and may be compared to some varieties of grass, which growing in little bunches permits the soil to be seen between each root. The peculiarity of growth, I believe, will be found most strongly developed in the Faté natives. It is as exaggerated as their type of skull. I have had a man from Faté in the bow of my boat, twenty feet distant from me, with this peculiarity so marked, that looking at him I could distinguish more skin than hair upon his head. Many of the young boys have hair thin, curly, tufted, and so distinct that they are little better than bare-headed." This last remark seems to be quite conclusive against Mr. Pritchard's attribution of these remarkable peculiarities

of hair to art and fashion. And the early portion of the passage appears to be equally confirmatory of what I have asserted respecting the hypsistenocephalic skulls of these Islanders.

Before I proceed to the further statements of my correspondent with respect to the hair of other Pacific Islanders, it will be worth while to allude to an affirmation of Mr. Pritchard, concerning the conformation of the skull among these people. He says, "on the question of crania, it will be well for theorists when treating of the skulls of the Pacific Islanders, ever to bear in mind the practice which prevails, more or less, in all the groups, of squeezing the heads of infants into the locally-admired shape, which shape varies somewhat in every group. Before a child is a month old, its head is made to assume a totally different shape from that designed by nature, whatever that may have been. The shape and development of the crania, are thus, in a measure, the result of an artificial process. In some cases, the tender skull is squeezed on the sides, over the ears, to make the head elevated in the centre. In some islands, it is pressed on the top and on the forehead to make it project behind." (p. 427). I am not aware that I am much of a theorist with respect to skulls. Mr. Pritchard can hardly be acquainted with the opinion of the older anatomists that the brain wholly determines the shape of the skull, now more correctly modified in such a manner as to allow both the brain and the skull to have a mutual causative influence in determining the form of the latter. But the great defect in Mr. Pritchard's argument arises from his supposing that any pressure made upon the head of a new born infant by the hands continued and repeated for *the first month of its life* will permanently alter or modify its shape. Such could not be the case, for both brain and skull are in some measure elastic, and will return to their normal form when the pressure is removed. There are and have been many races of men among whom an artificial shape is, or has been impressed upon the head. This, however, is always done by bandaging, and compresses, sometimes made of wood, which are permanently applied, and not removed until the child has reached the age of about one year. There need be no hesitation in saying that this permanent and continued pressure is the *only* mode to produce an artificial form of the head. Occasional and transient pressure for the first month of life could not effect this purpose at all. Therefore, whatever Mr. Pritchard attributes to an occasional squeeze of the hand of Polynesian mothers may be taken for what it is worth.

Respecting the *colour of the hair* my correspondent will be seen to confirm all that has been asserted by Mr. Pritchard. He writes, "Touching the colour of the hair, I think it right to inform you, every

shade of colour may be found in any island. The natives use lime which turns the hair all shades, from light yellow or tow colour to brown-red. Again, roots and bark of trees are largely used. At Rotumah, peopled by a race well worthy of your attention, the hair frequently reaches in long wavy tresses to the hips. Lime, and an extract of 'dawa' bark, turn it a rich often golden red. Without the use of any of these artificial aids, I think all the natives of these waters, Papuans and Malayo-Polynesians, will be found to possess *black hair only*."

My correspondent's further observations on the hair of these remote Pacific Islanders, and other matters, are well worthy of being preserved. "The whole group of Gilbert or Kingsmill Islands, extending over six degrees of latitude, with one exception, is inhabited by straight, long-haired people. This exception is the north island, marked Pitt's Island on the chart, the Taritari, or Makin of the natives. The people of Taritari have the same language, manners, and customs as those of the other islands in the group, but not straight hair. Strange to say, they have curly 'fuzzy' hair, growing in luxuriant abundance and looking like a large black mop, but not a 'thrum' mop. So large and thick is their hair, always beautifully kept, that men carry miniature spears of hard wood two feet long, generally stuck over their ears. While smoking and chatting, these knitting-needle-like combs are run through the hair, or employed to scratch any part of their scalps, otherwise inaccessible. In fits of anger they are sometimes hastily withdrawn and used as daggers with fatal results.

"The *teeth* of these people cannot well be discoloured like those of Malays. Betel nut is not known, neither is ava, or kava, which so much discolours the otherwise fine teeth of the Polynesians. Most of these people have slight whiskers and moustaches. At Ellice's group, in one island above St. Augustine, native name "Nunemaya," the men are heavily bearded, and not a little proud thereof. Thus, in Gilbert's group, we find straight-haired men, with one exception—the curly-headed Makin men. In Ellice's group, just south of Gilbert's, the men have, as a rule, a dozen straggling hairs for a beard, excepting at the little isle of Nunemaya, where the men have splendid beards.

"*Tattooing* throughout the Carolines, or at least the eastern group, is always in straight lines. The favourite pattern is the fish-bone, placed length ways on the body or limbs.* In Fiji, only two parts of a woman were tattooed, viz., the lips and the labia.

* This is in perfect agreement with the men and women of the island of Gouam in the beautiful Plates 53 and 54 of the voyage of *L'Uranie* and *La Physicienne*. Their legs are tattooed with long streaks, in the herring-bone pattern.

"Throughout the Eastern Caroline Islands and Ellice's group, the custom of keeping ancestral heads, or skulls, prevails. At Apamama (Gilbert's Island), the skull of one old king receives a sort of adoration. In Ellice's group skulls of head chiefs are hung up in houses and taken down periodically, and oiled during the weeping and wailing of women. I was present at one such ceremony. At some Islands the women not only weep, but beat their eyes from time to time with their fingers, until the eyelids are so swollen as to render it necessary to keep in the house for some days.

"The colour of the Radaack, Ralick, and Kingsmill men has long puzzled me. Among twenty light brown men, one may observe a thick-set fellow as black as a Fijian.

"The *scaly eruption* is very common and very disgusting. I have seen scales absolutely being blown off a man. Perhaps their diet, exclusively fish and cocoa-nuts, with a very, very small allowance of *poipoi*, an Arum, may produce this cutaneous eruption. Fish is more frequently eaten raw than cooked."

Mr. Alfred R. Wallace, the distinguished naturalist, who courageously devoted eight years of his life to researches to promote the study of his favourite science in the islands of the equatorial region of the extreme Western Pacific, to the west of New Guinea, with such remarkable zeal, perseverance and also success, came in contact with some of the races to which the term Papuan is applied. These people, I have long had reason to know, excited his especial attention and interest. In the charming volumes entitled *The Malay Archipelago*, he has introduced frequent notices of them, and attempted to delineate their characteristics with much success. Although, in one sense, subordinate to natural history as usually pursued, his work is rich in anthropological materials, for he always devoted his attention to the people among whom his pursuits threw him, and made them the subject of his keen observation. A notice of Mr. Wallace's work, extending over a number of pages, has appeared in this *Anthropological Review*, No. 26, p. 310. His travels did not extend to the New Hebrides, Carolines, Solomon Islands, or to those to which the term Polynesian is most usually applied. In his general sketch of the typical Papuan race, he says, "The colour of the body is a deep sooty-brown or black, sometimes approaching, but never quite equalling, the jet-black of some negro races. It varies in tint, however, more than that of the Malay, and is sometimes a dusky-brown. The hair is very peculiar, being harsh, dry, and frizzly, growing in little tufts, or curls, which in youth are very short and compact,* but afterwards

* This appearance of the peculiarity of the Papuan hair, as we may call it for want of a better name, in early age, seems seriously to weaken the

grow out to a considerable length, forming the compact frizzled mop which is the Papuan's pride, and glory. The face is adorned with a beard of the same frizzly nature as the hair of the head. The arms, legs, and breast are also more or less clothed with hair of a similar nature" (vol. ii, p. 273). Of the hair of the people of Dorey, in New Guinea, he speaks in the following sentence, "Their colour is a deep brown, often approaching closely to black, and the fine mop-like heads of frizzly hair appear to be more common than elsewhere, and are considered a great ornament, a long six-pronged bamboo fork being kept stuck in them to serve the purpose of a comb; and this is assiduously used at idle moments to keep the densely growing mass from becoming matted and tangled. The majority have short woolly hair, which does not seem capable of an equally luxurious development" (ii, 185). In a later page, Mr. Wallace speaks of "the Negritos, the black woolly-haired races of the Philippines and the Malay Peninsula," and points out the numerous marks of difference which distinguish them from both Malays and Papuans. His concluding sentence is that they "agree very closely in physical characters with each other, and with the Andaman Islanders, while they differ in a marked manner from every Papuan race." This is almost the only evidence to be derived from Mr. Wallace's beautiful book on the subject of hair, who had not the opportunity of seeing those people who are most remarkable for their hair growing in separate tufts. The figure Mr. Wallace gives of the New Guinea men at p. 185, is almost precisely identical, as far as the hair goes, with that of Thakombau, the Feegee chief. Besides the Negritos and the Andaman Islanders, and perhaps more truly than the former, to judge from specimens of each hair which we possess, the lately extinct Tasmanians, a large robust race, had this peculiar frizzly hair, growing in little tufts in a thrum-like manner, which they dressed with grease and red ochre.

One of the most important anthropological conclusions of Mr. Wallace is that the Malays and the Papuans are two distinct races. "In the *Malay Archipelago* we have an excellent example of two absolutely distinct races, which appear to have approached each other, and intermingled in an unoccupied territory at a very recent epoch in the history of man; and I feel satisfied that no unprejudiced person could study them on the spot without being convinced that this is the true solution of the problem, rather than the almost universally accepted view that they are but modifications of one and the same race." (ii, 217). This conclusion is often repeated. Still, Mr. Wallace must not be hastily regarded as belonging to that school of anthropologists, force of Mr. Pritchard's line of argument, in attributing its singular form to art alone, which form may be varied at pleasure.

who maintain the distinct origin of the races of man and their essential differences. Such a doctrine would be quite contrary to the Zoological Philosophy he has adopted. This is displayed in another passage, which may be said to lessen the value of all his preceding remarks upon radical diversity, if we do not mistake its meaning. The passage to which we refer is the following. "I believe, therefore, that the numerous intermediate forms, between the Polynesian and Papuan, that occur among the countless islands of the Pacific, are not merely the result of a mixture of these races, but are, to some extent, truly intermediate or transitional; and that the brown and the black, the Papuan, the natives of Gilolo and Ceram, the Fijian, the inhabitants of the Sandwich Islands and those of New Zealand, are all varying forms of one great Oceanic or Polynesian race." (II, 280).*

Upon another subject of great importance to anthropologists, Mr. Wallace has been induced to say a few words in an appendix entitled "Crania." This appendix is itself an evidence of the author's acute analytical powers. It is introduced by the remark, that "a few years ago it was thought that the study of crania offered the only sure basis of a classification of man." In the infancy of anthropological science such an impression might probably have been entertained. More recently, the opinion has been growing that man, above all other animals, must be taken as a whole, both physically and mentally, and studied in his peculiarities, in order to classify his various and different races with satisfaction. Still, this is far from sufficiently justifying Mr. Wallace's further assertion that "now the opinion is beginning to gain ground, that for the special purpose of classification crania are of very little value." Man is more especially distinguished from all other animals by the great diversity and extent of his intellectual and moral faculties. He is a psychozoon. These peculiarities rest upon the organisation of his brain. This had led that most eminent zoologist, Professor Owen, to place him in a special subclass *Archen-cephala*. And the different families of man are marked by nothing more characteristically than their differences of mental and moral development, or their civilisation in one of the senses in which that term is applied. This view is strikingly confirmed by Mr. Wallace's own observations, who discriminates the remarkable races of people

* In the last chapter of Mr. Wallace's work, *On the Races of Man in the Malay Archipelago*, there is an admirable epitomised contrast between the two distinct races, the Malay and the so-called Papuan, which is quite unequalled among such graphic "sketches." Mr. Pritchard had previously perceived such a contrast between his Papuans and Polynesian Malays, without, however, making the attempt to delineate it in so elaborate a manner. (*Polynesian Reminiscences*, p. 377.)

he met with, chiefly by their mental peculiarities. Hence the cerebral organisation may be taken as the truest epitome of man, and the index of the place which any particular race (for each race has a series of mental qualities which runs through the whole race with tolerable constancy and uniformity) of mankind occupies in the natural system. This is undeniable. The great difficulty is in ascertaining and appreciating the peculiar cerebral organisation of each race of man. Even if the brain itself could be subjected to the closest anatomical scrutiny, its physiology is at present so unsettled that the results would be doubtful and uncertain. There need be no hesitation in allowing that the skull is an imperfect representative of the peculiarities which each race of man presents. Still, if his most essential differences from other races exist in his cerebral organisation, his skull will probably be allowed to be the most patent and stable image of these diversities. This is about as much as Blumenbach claimed for the cranium.* He did not arrange human races exclusively upon the forms of their skulls. He also included the structure of the body, the skin, and the hair in the definitions of his varieties of man. It was the late Professor Retzius who simplified the arrangement, and based it upon the skull alone. That every other portion of man's physical organisation should be studied, and all the peculiarities observed and described, is as essential for the classification of man as it is for the classification of any other animal. For it must be recollected that this is the practice among naturalists. They may place the teeth, or the organisation of the limbs, etc., as occupying the first place in the classification of the mammalia, yet they constantly find that they are compelled to embrace other structures and peculiarities, not excluding even the habits of animals. Classification ought not to be regarded as so perfect and complete in all the lower animals, and only uncertain in man. Such is far from being the case, and probably always may be. The creation was not made for systematists to arrange and classify. This was not the purpose of the creation. No system yet invented has been sufficiently comprehensive to embrace all the endless divergencies and deviations of nature. It may be safely said that in no classification of human races which is worth the name, can the cranium be left out. On the contrary it must always occupy *the principal place*.

Other mammalia have been classified by their teeth and the forms of their extremities. The teeth of different races of men differ essentially, still, as all races of men live on the whole upon pretty much the same kind of food, all partake of both animal and vegetable diet, there are none of those prominent and obvious differences in their

* *Decas*, i, p. 5.

dentition, such as present themselves among other mammalia as a class. The differences are almost wholly differences of degree only. The extremities again among the different human races vary materially, but not so essentially in their structure as to enable a systematist to classify the races by the differences of that wonderful instrument the hand, or by those of the feet. It was of these organs that Professor Owen once wrote: "The foot by which we stand and walk erect, the hand which so liberated, can apply its matchless structure to do the biddings of a high intelligence, and the organ itself of that intelligence, are severally structures peculiar to and characteristic of the human kind."

In conclusion, it may merely be said, that, unless there are some essential differences in the organisation of the brain, which probably may always elude human scrutiny, there is no more certain means of classifying the different races of man than by taking the whole of his organisation into account, with colour and form, and, especially, primarily and chiefly, his cranium, the form and dimensions of his skull, and his mental and moral faculties. The gross weight of the brain affords some of the most important and most valuable criteria, which *can never be overlooked*, but must be studied and determined by many future labourers for years to come, still, even these materials cannot be employed as so ready a key as might be desired. Partly from the wide range of individual diversities, or "individual varieties" which present themselves in all races, pointed out so clearly by Mr. Wallace, it will be requisite to derive our averages from a much larger number of observations than have hitherto been made. Hence the futility of many recent remarks made upon individual skulls. The skull and the brain will still always remain the truest bases of the classification of human races. And it ought not to be overlooked that all the most eminent craniologists, who had formed the highest estimate of the value of the skull in the natural history of man, as Blumenbach, Retzius, and Van der Hoeven, were equally, if not still more distinguished as comparative anatomists and naturalists.

J. B. D.

Anthropological News.

PROFESSOR HUXLEY ON POLITICAL ETHNOLOGY.

YESTERDAY evening Professor Huxley delivered a lecture on "The Forefathers and Forerunners of the English People," being the second of a series of "Sunday Evenings for the People" provided by the National Sunday League. The Professor's main object appeared to be to combat the notion that any political weight is properly to be attached to the distinction between the Celtic and Anglo-Saxon races. He said—

Of late years ethnology, the science which is concerned with the natural history of man, has had a good deal to do with practical politics. A vague though powerful sentiment has become developed in favour of the determination of political by natural relationships. There seems to be a tacit assumption that men ought to associate themselves according to their natural kinships; and that all barriers, natural or artificial, should be broken down which either separate men of one blood from coalescing into a political entity or, on the other hand, bind together into one nation those who are of different blood.

Panslavism, the aspirations after German unity and Italian unity, the talk about the Latin as contradistinguished from the Germanic or Slavonic nations, are so many practical shapes of this belief; and the advocates of these several views, so far as they are consistent and logical (which, perhaps, is not very far), appeal to ethnology to bear them out. Among our own people the nationality doctrine takes a shape which is painfully familiar to every one who attends to the course of political events. I mean the antagonism of the Celt and the Teuton, or Anglo-Saxon, most conspicuously represented by the Irish and the English constituents of the population of our islands.

A leading article on the affairs of Ireland in any popular English paper is pretty certain to contain some allusion to the Celt and his assumed peculiarities. If the writer means to be civil, the Celt is taken to be a charming person, full of wit and vivacity and kindliness, but, unfortunately, thoughtless, impetuous, and unstable, and having standards of right and wrong so different from those of the Anglo-Saxon that it would be absurd, not to say cruel, to treat him in the same way; or if the instructor of the public is angry, he talks of the Celt as if he were a kind of savage, out of whom no good ever has come or ever will come, and whose proper fate is to be kept as a hewer of wood and a drawer of water for his Anglo-Saxon master. This is the picture of the lion by the man. Any Irish national paper will supply you with the picture of the man by the lion. Here, again, according to the temper of the moment, the portrait of the Anglo-Saxon varies—from a stolid, good-natured kind of fellow, whose main fault is that he is incapable of comprehending the Celtic nature and aspirations, down to the well-known "base, brutal, and bloody, Saxon," with whose features that great limner, the late Daniel O'Connell, made us all so familiar. Nor are the ethnological assumptions involved in these views of the antagonism of the Celt and the Teuton confined to mere popular scribblers or demagogues. Grave and able disputants dealing with such a problem as the Irish land question have much

to say about the necessity of respecting Celtic peculiarities, and take their countrymen seriously to task for their narrowness in supposing that what is good for Teutonic is good for Celtic races of mankind.

Now this is neither the time nor the place for political discussion. I do not propose to express an opinion, one way or another, about Irish affairs or Celtic nationality. The subject which I purpose to deal with lies much more within my own province. I propose to inquire what foundation there is for these ethnological assumptions of the politician. Who are the Celts? Who are the Teutons? What sort of grounds are afforded by scientific investigation for the belief that these two stocks of mankind are so different as to require different political institutions? And supposing such grounds to exist, are the Celtic and the Teutonic stocks among us so distinctly separable that it is practicable to make such distinctions between them? Let us try to deal with these questions in succession.

At the present moment, the languages which are spoken by the natives of these islands belong to two very different groups. There is, on the one hand, the English group, represented by a great variety of dialects—the lowland Scotch, the Suffolk, and the Dorset dialects, for example, being so different that the speakers of each might have a good deal of difficulty in understanding one another. On the other hand, there is the Celtic group—comprising the Cymric spoken in Wales, and formerly in Cornwall, and the Gaelic spoken in the highlands of Scotland, the Isle of Man, and Ireland. The speakers of Cymric and Gaelic are not intelligible to one another. They are like French and Italian, totally distinct, though allied, languages. We call the people who speak Cymric and Gaelic Celts, while the English-speaking population is roughly called Anglo-Saxon, except, so far as we have reason to believe, that it comprises people who formerly spoke Celtic tongues.

But here, to begin with, is a plain source of confusion. Physical, mental, and moral peculiarities go with blood, and not with language. In the United States, the negroes have spoken English for generations, but no one on that ground would call them Englishmen, or expect them to differ physically, mentally, or morally from other negroes. And hence, assuming in the first place that we are justified in calling all speakers of Celtic dialects Celts; and assuming, in the second place, that these Celts are a different stock from the Anglo-Saxons; our first business, before these assumptions can bear any practical fruit, is to ascertain what part of the present population of these islands is Celtic by blood in addition to that part which still speaks Cymric or Gaelic. This is a very difficult inquiry, and has resulted, as yet, in more uncertainties than certainties. I will put before you those results which, to the best of my knowledge and belief, may be depended upon.

At the time of Cæsar's invasion, now nearly 2,000 years ago, there is every reason to believe that the population of Britain, from Land's End to John o' Groat's House, spoke Cymric dialects, while the inhabitants of Ireland all spoke Gaelic. The whole population of these islands, therefore, so far as their language is concerned, was Celtic, but the Britons belonged to the Cymric division, and the Hibernians to the Gaelic division. The English language did not exist, and there is no evidence that any Teutonic dialect was spoken within our coasts. The Romans, as you know, never entered Ireland, but they held Britain for four centuries. England is full of the remains of their wonderful works, and has much more to show as the result of the Roman occupation than India would exhibit of ours if we left that country. Nevertheless, the Roman blood and Roman language seem to have made no more impression

on the ancient British people than the English blood and language have on the Hindoos. For my present purpose, therefore, their influence may be neglected. When the Romans evacuated Britain the Cymric Celts were attacked on two sides—on the north by the Scots and the Picts, on the east and south by the Angles and Saxons. The Scots were Gaelic-speaking Irish, who speedily won a foothold in the highlands, and have remained there ever since. But though they subjugated, and probably in a great measure destroyed, the Cymri, who were their predecessors, they only substituted one Celtic population for another. Who the Picts were, and whence they came, no one knows with certainty; but the balance of evidence to my mind is in favour of their being a Teutonic population, derived either from Scandinavia or North Germany.

If they were a Teutonic population, they harried and ravaged all Scotland north of the Firths of Forth and Clyde so effectually, in conjunction with their allies, the Scots, that the Celtic element in Caithness, Sutherland, and the east coast of Scotland, must have been practically abolished.

Leaving the Picts aside, however, it is certain that for something like five hundred years these islands were encircled by a sort of fiery girdle of Teutonic invaders, Angles, Saxons, Jutes, Danes, and Norsemen—who sometimes entered into alliances with the Celts; but more frequently made war upon them with indescribable ferocity, and eventually gained fixed possessions in all parts of Britain and Ireland.

Upon the eastern and south-eastern coast of Britain, which was most exposed to the invaders, the Celts seem to have been absolutely exterminated over vast districts—a Celtic name of a river or a hill being all that is left to show that they once existed. But as, in the slow progress of centuries, the Teutonic conquests were pushed farther and farther westward, the antagonism of savagery and civilisation, of paganism and Christianity, ceased to exist. The Teuton was content to dominate instead of exterminating, and in the western parts of England and Lowland Scotland, as well as in Wales and the Highlands, the change of blood effected by the Saxon and Danish conquests has been, on the whole, insignificant. One is apt to forget that a couple of centuries ago there was as little English spoken in Cornwall as there now is in Wales, and that not only Cornish men but Devonshire men are as little Anglo-Saxons as Northumbrians are Welsh. The Norman Conquest is hardly worth mentioning from an ethnological point of view. What new blood the Normans introduced was Celtic as well as Teutonic. They and their language have alike been smothered in the English nationality, which, from the facts which have been stated, it is simply absurd to call Anglo-Saxon.

Let us now turn to Ireland. The study of the so-called history of that country before the Norman invasion in the twelfth century is not a hopeful undertaking for the searcher after fact, but some points are clear. It is certain, for example, that the Norsemen and the Danes had an immense deal of intercourse—sometimes friendly, sometimes very much the reverse—with Ireland. Burnt Njal, the hero of the wonderful Icelandic Saga, which Dr. Dasent has made accessible to all of us, bears, like many of his compatriots, an Irish name. It is, in fact, the Norse representative of the Irish O'Neil. And Dr. Dasent tells me that a lively slave trade was carried on for centuries between Scandinavia and Ireland. Burnt Njal's Saga tells of Icelanders who took an active share in Irish wars. We know that Norse chiefs long ruled one part of the country, and that Danes occupied all the chief mari-

time towns. It is inconceivable that all these conquests should have taken place without a large infusion of Teutonic blood among the Irish people.

Then came the Norman conquest, and the spread of Normans and Englishmen among the landholders of the country, by intermarriage, force, or fraud. The English policy of those days was to set up an England in Ireland which should be strong enough to keep the native Irish in check, but weak enough to depend on the support and execute the will of the English Government. The practical result was, firstly, a constant condition of civil war and anarchy; and, secondly, the forcing of all the Norman and English who had intermarried with the Irish into identifying themselves with the Celts in name and language, and becoming the leaders of every so-called national movement. From these causes, the state of Ireland was bad enough under the Plantagenets; but when the Reformation came the Irish as a body, and without distinction of Teutonic or Celtic elements, declined to have anything to do with it, and the antagonism of religion was added to other antagonisms. From the time of Elizabeth to that of Cromwell, the country was devastated by the most ferocious and savage warfare, until, in the middle of the seventeenth century, it is probable that the population of Ireland was reduced to less than a million.

Ireland was a terrible thorn in the sides of the statesmen of the Commonwealth. They sent Cromwell over, and he dealt with the Irish at Drogheda and elsewhere in such fashion that to this day his name remains the symbol of ruthless cruelty in the mind of the Irish peasant. If you see an old ruin, it is Cromwell who destroyed it; and his heaviest malediction is the curse of Cromwell. I believe this is rather hard upon the Lord Protector, who was a merciful man enough when he had his own way; but whosoever the responsibility may be, it is certain that Ireland was dealt with by the Puritans as no country has been dealt with in civilised times. If you look into the records of that period, you will find that they "sought the Lord" a good deal about it, and the result of their seekings was this. They formed what we should now call a joint-stock company, with limited liability, for the conquest of Ireland—who were called the "Adventurers." Every adventurer was to receive land, proportioned to the stock invested, when Ireland was conquered. Well, Cromwell and Ireton between them not only conquered but crushed Ireland, so far as she was Catholic. Then the Government divided the land—all Ireland except Connaught—into parcels, which were allotted partly to the adventurers and partly to the army, and offered the pre-existing Catholic population, no matter whether it was Teutonic or Celtic in blood, the choice of two alternatives—emigration into Connaught or beyond the seas. It is computed that some forty thousand able-bodied men were drafted off into the armies of foreign sovereigns, who rejoiced to have their services, and inflicted many a blow on England by their help. Those who remained—old, young, rich, and poor—were ordered in the late autumn to leave their homes and their crops, and betake themselves to the wilds and wastes of Connaught. Suppose the first Napoleon had successfully invaded England, and that about August he had ordered all the Protestants in England east of the Severn and north of the Dee to give up their land to French Catholics, and take themselves off to Cornwall and Wales, he would have performed a feat exactly comparable to the so-called Cromwellian settlement of Ireland. It is true that the laws of nature, more merciful than those of man, prevented the complete carrying out of the orders of the Parliament. The English superseders of the old proprietors

found that land without labourers was almost as valueless a present as a steam-engine without coal. Hence many of the peasantry were allowed to remain, and many were brought back from Connaught. But the invaders remained as the dominant caste, and in the north as the bulk of the population. And a large part of Ireland has thus been as completely Teutonised by the Lowland Scotch and the eastern English as these people were themselves Teutonised by the Saxon and Norse invasions.

If one wishes to think of a representative Irishman, the image of the "Tipperary Boy," with all his merits and all his faults, involuntarily presents itself to those who have known Irishmen. But I believe that I am affirming no more than there is warranty for, if I declare that a native of Tipperary is just as much or as little an Anglo-Saxon as a native of Devonshire. And, if you want to know why a Tipperary man occasionally "tumbles" his landlord, and a Devonshire man does not, you must seek the cause of the difference in something else than in the presence of Celtic blood in the one and not in the other.

To sum up, there is full evidence to prove that in Ireland as well as in Britain the present population is made up of two parties—the one primitive, so far as history goes, and speaking a Celtic tongue; the other, secondary and intrusive, and speaking a Teutonic tongue.

We have absolutely no knowledge of the relative proportions of these two parties in England and in Ireland; but it is quite possible, and I think probable, that Ireland, as a whole, contains less Teutonic blood than the eastern half of England, and more than the western half. Thus, assuming that Celtic speech and Teutonic speech are making two separate groups or races of mankind, I absolutely deny that the past affords any reason for dealing with the people of Ireland differently from that which may be found to answer with the people of Devonshire, or *vice versâ*. And, if this is true, I think that the sooner we leave off drawing political distinctions between Celts and Saxons the better. But, as an ethnologist, I go further than this. I deny that there is sufficient proof of the existence of any difference whatever, except that of language, between Celt and Teuton. And my reason for this seeming paradox is the following. All the accounts which have been handed down to us by the Romans and the Greeks of the physical character of the Celtic speaking peoples known to them, and whom they called Gauls or Kelts, agree in ascribing to these terrible enemies of theirs a tall stature, fair hair of a reddish or yellow tinge, blue eyes, and fair skins. Such were the Gauls whom Cæsar conquered. Such were the Gauls who settled in Asia Minor, to whom the Epistle to the Galatians was written; such again were the Britons with whom Cæsar fought in North-eastern Britain. But all the ancient authors give exactly the same account of the physical character of the ancient Germans. There is not a doubt that they also were tall, blue-eyed, fair-haired, and fair-skinned; so, without doubt, were all the other Teutonic speaking people—whether Angles, Saxons, Danes, or Norsemen. So close was the physical resemblance of the Celts and the Teutons who, in the early days of the Roman Empire, inhabited the right and the left banks of the Rhine, that it was, and is, a matter of discussion whether particular rights belonged to the one division or the other—and we hear of Celtic tribes who tried to pass themselves off as of German origin—an imposture which could not have been attempted had any clear physical difference existed between the two stocks. I am unaware of any evidence of the existence of a dark-complexioned people speaking a Celtic dialect outside of Britannia (Ire-

land). But it is quite certain that, in the time of Tacitus, the Silures, who inhabited South Wales and Shropshire, were a dark-complexioned people; and, if Irish tradition is to be trusted for anything, we must credit its invariable assertion that only the chief Irish tribes—that of the Milesians—consisted of dark-haired, black-eyed people. And the commonest observation will convince you of the existence of a dark and a light stock, and of all the shades produced by their intermixture in Ireland and Britain at the present day. In Ireland, as in Britain, the dark stock predominates in the west and south, the fair in the east and north.

The same fact was observed in France long ago by William Milne-Edwards. The population of Eastern and Northern France is, on the whole, fair—that of Western and Southern France is, on the whole, dark. Turn to Cæsar, and you will find the reason of this singular distribution of complexion. To the south of the Garonne, he tells us, the population consisted of the Aquitani, who spoke a language which was not Celtic. This language is that which is now spoken by the people who inhabit the shores of the Bay of Biscay, and who are called Basques by foreigners. Hence the language is termed Basque, but they themselves call it Euskaldunac. It is a language which is the despair of philologists, inasmuch as it presents not a trace of affinity with any other European or Asiatic tongue. People speaking this language were the primitive inhabitants, not only of the south of France, but of Spain, whence they are called Iberians, and they have been traced as far west as Sicily. But in all directions they have been broken up by Celtic and other invasion; and wherever the Celts have penetrated, they have substituted their own language for the Euskaldunac, the mixed population—a Celtiberian—everywhere, so far as I know, speaking Celtic, and not Euskarian dialects. But, just as the Celtic language has been lost in Cornwall, while the proportion of Celtic blood remains unchanged, so the Iberian blood has remained, although all traces of the language may have been obliterated. I believe it is this Iberian blood which is the source of the so-called black Celts in Ireland and in Britain; and I may mention three circumstances, upon which I do not wish to lay too much weight, but which, so far as they go, are in favour of my hypothesis. The first is, that all Irish tradition derives the Milesians from Spain; the second is, that the termination *wri*, in the name of the Siluri, is characteristically Euskarian; the third is, that Tacitus expressly compares the Silures with the Aquitani. When the genealogy of the English people is thoroughly worked out, we find that our forefathers are reduced to two stocks—the one, a lightly made, short, dark-complexioned people, the Iberians who, as far as they can be traced back, talked Euskaldunac, a language which has not the least resemblance to any other spoken in Europe; the other, a tall, big-limbed, fair people, who, as far as we can trace them, have always talked some form or other of the languages of that great Aryan family to which German, Latin, Greek, Persian, and Sanskrit belong, and of which the Celtic tongues are outlying members. In everything which constitutes a race, these Aryan or Celtic and Teutonic nations are of one race. In every particular by which races of mankind differ, the Iberians and the Aryans are of different races.

Thus English political ethnology offers two problems:—1. Is there any evidence to show that the Iberians and the Aryans differ in their capacity for civilisation, or in their intellectual and moral powers? All I can say is, that I know of none. Whether in Greece or Rome, in modern Italy, France, Germany, or England, the dark stock and the light have run neck and neck

together. 2. Is there any evidence to show that there is what may be called a political difference between the Celtic Aryan and the Germanic Aryan? I must say again that I can find none. And one of the keenest observers who ever lived, and who had the opportunity of comparing the Celt and the German side by side—I mean Julius Cæsar—tells us especially that the Gauls in former days were better men than the Germans—that they had been corrupted by contact with civilisation, and that even in his day the races who held the Black Forest in possession were the equals of the Germans in frugality, hardiness, and every virtue of man or warrior. Put side by side with this the picture of the Saxon when, England fairly won, he sank into the slothful enjoyment of his possessions; and after the Conquest fell so low that the invective of Giraldus Cambrensis against the Saxons of his day, as idle worthless fellows, cowards, and liars, fit only to be drudges and menials, reads just like an extract from an English or American leading article against the low Irish. Do not let what I have said mislead you into the notion that I disbelieve in the importance of race. I am a firm believer in blood, as every naturalist must be, and I entertain no doubt that our Iberic forefathers have contributed a something to the making of the modern Englishman totally distinct from the elements which he has inherited from his Aryan forefathers. But which is the Aryan element and which the Iberian I believe no man can tell, and he who affirms that any quality needful for this, that, or the other form of political organisation is present in the one and absent in the other, makes a statement which I believe to be as baseless in natural science as it is mischievous in politics. I say again that I believe in the immense influence of that fixed hereditary transmission which constitutes a race. I believe it just as I believe in the influence of ancestors upon children. But the character of a man depends in part upon the tendencies he brought with him into the world, and in part upon the circumstances to which he is subjected—sometimes one group of influence predominates, sometimes the other. And there is this further truth which lies within every one's observation—that by diligent and careful education you may help a child to be good and wise and keep it out of evil and folly. But the wisest education cannot ensure its being either good or wise; while, on the other hand, a few years of perverted ingenuity would suffice to convert the best child that ever lived into a monster of vice and wickedness. The like applies to those great children, nations and their rulers, who are their educators. The most a good government can do is to help its people to be wise and noble, and that mainly by clearing obstacles out of their way. But a thoroughly bad government can debauch and demoralise a people for generations, discouraging all that is good, cherishing all that is evil, until it is as impossible to discover the original nobleness of the stock, as it is to find truthfulness and self-restraint in a spoiled and demoralised child. Let Englishmen ponder these things. If what I have to say in a matter of science weighs with any man who has political power, I ask him to believe that the arguments about the difference between Anglo-Saxons and Celts are a mere sham and delusion. And the next time the Irish difficulty rises before him I ask him, in the first place to read Mr. Prendergast's book on the Cromwellian Settlement, and then to put before himself these plain questions:—Firstly, Are the essentially Celtic people of Devonshire and Cornwall orderly, contented, industrious Englishmen, or are they not? And, secondly, is there the smallest probability that the folk who sang, "And shall Trelawney die?" would have been what they are if they had been dealt with as the people of

Tipperary were by our pious Puritan ancestors? And if he answers the first question in the affirmative, and the second in the negative, as he certainly will, he will have fulfilled Dr. Johnson's condition for dealing with all great questions—"Sir, first clear your mind of cant."—*Pall Mall Gazette*, Jan. 10.

PROFESSOR HUXLEY'S LAST NEW THEORY.

To the Editor of the Pall Mall Gazette.

Sir,—Even Professor Huxley's enemies, if he has any, must admit that he is a very able man, and that his energy is, to say the least, quite equal to his judgment. If he has a fault, it is, perhaps, that, like Cæsar, he is ambitious. We all know what Sydney Smith said of Dr. Whewell:—"Science is his forte, but omniscience is his foible:" perhaps his playful wit would have passed somewhat the same kind of judgment, and with the same justice, on our ubiquitous Professor. He might have said, perhaps, that cutting up monkeys was his forte, and cutting up men was his foible. A little while ago he ran amuck at the Comtists, then he attacked the mathematicians, now he has undertaken to prove against all comers that there is no difference whatever, except in language, between the Teuton and the Celt. At the last meeting of the British Association, Professor Sylvester took up the cudgels on behalf of the mathematicians very successfully, and if there were among our ethnologists any one as courageous and as competent as the Woolwich Professor he might possibly gain at the next meeting of the British Association as complete a victory. My ambition is of a much humbler kind. I only wish, with your permission, to be allowed to question one very decided statement which Professor Huxley repeats with much emphasis more than once in the lecture you reported on Monday, and briefly to mention a few facts, in arrest, if I may so say, of judgment.

Professor Huxley asserts that "Devonshire men are as little Anglo-Saxons as Northumbrians are Welsh; and again he declares that a native of Tipperary is just as much, or as little, an Anglo-Saxon as a native of Devonshire."

1. As a matter of history. It is nearly 1,000 years since Athelstan drove the Cornish men, "Cornwallenses," out of Exeter, and forced them to retire beyond the Tamar. Lappenberg thinks it probable that there were some Saxon inhabitants in Exeter in the time of the Romans, and possibly even before.

2. Geography. The Rev. Isaac Taylor has made "An analysis of the names of villages, hamlets, hills, woods, valleys, &c.," in Devonshire and several other counties, and he finds that the proportion of the Anglo-Saxon names to Celtic in Devonshire is as sixty-five to thirty-two, or more than two to one; in Ireland the proportion is nineteen to eighty, less than one to four; and in Cornwall it is nearly the same. Now as these Anglo-Saxon names must have been given by Anglo-Saxon men, what has become of their descendants?

3. Surnames. If we apply the old and approved test

"By Tre, Pol, Ros, and Pen
Ye shall know the Cornish men."

to the two counties of Devonshire and Cornwall, we find these Celtic prefixes still everywhere predominant in the one county, and considering their relative position, strangely uncommon in the other. So among Christian names, the Celtic Jennifer (Guinever) is still used in Cornwall, and the Teu-

tonic Herman (Arminius) in Devon. If we run through the names of the principal "Devonshire worthies," we find they are all, without a single exception, peculiarly and undeniably Saxon:—Raleigh, Drake, Hooker, Churchill (Duke of Marlborough), Reynolds, Gifford, Coleridge, Northcote, Eastlake, Turner (Turner was not born in Devon). It would be curious to compare this list with one similar of the great men born in Tipperary; but it unfortunately happens that I am not acquainted with their names. If Professor Huxley would employ some rare moment of leisure in arranging the names of all the great men born in Ireland in two parallel columns, one comprising those of Scotch or English extraction, the other the undeniably Irish, he would perhaps be a little surprised at their relative value and length.

4. Dialect. It is strange that Professor Huxley, "speaking as an ethnologist," does not seem to be aware that there is such a thing as a Devonshire dialect (or an "Exmoor scolding"), and that it is peculiarly, I may say wonderfully, Saxon. I have repeatedly heard "leery" for empty, "drang" for press, "fang" for take, "rin" for run, "too" (zu) for at, etc. Even the personal pronouns "er" and "ihn" (for he and him) are still in such common use among the peasantry as to have given rise to the Cockney joke, that in Devonshire they call everything *her* except a tomcat. These examples—and many more might be given—are sufficient to prove that the language was spoken in Devon in Anglo-Saxon times, and not imported ready-made in its later form, as was the case in Ireland.

5. It has been hitherto believed, and the belief may possibly survive Professor Huxley's dictum, that there is a wide difference between the Teutonic character (as seen in the Germans) on the one side, and the Celtic character (as seen in the French and the pure Irish) on the other; and that the English character stands midway, or nearly midway, between the two, with more enterprise and *esprit* than the one, more love of law and order than the other. Now I believe any competent judge will admit that the Devonshire man approaches more nearly than even the average Englishman to the recognised Teutonic type.

It has also been believed in the Prehuxleian period that the Celtic race is very far from sharing that passionate love of the sea which distinguishes the German (especially in the Scandinavian branch) wherever he lives upon the coast. Now, though Ireland is surrounded by the ocean (it was no Englishman who called it "the melancholy ocean"), though no place in the interior is more than forty miles from the coast, I venture to think it would be found that the number of sailors which all Ireland supplies to the navy is less than what is furnished by the county of Devonshire alone. In the census of 1851, the latest which I have at hand, the number of Irish in the navy was only 2,572, just one-tenth of the whole effective force. In the same year the number of Irish in the army was 51,499, out of a total of 142,870; or considerably more than one-third.

Professor Huxley quotes Cæsar as a witness, but hardly, I think, with that fairness for which he is usually distinguished. He tells us what Cæsar had *heard* as to the comparative merits of Gauls and Germans at some long anterior period (according to Long, 300 years B.C.), but he does not tell us what this "keen observer" *saw*. He does not tell us that Cæsar draws a broad distinction—one may almost say a contrast—between the Gauls and Germans as he *knew* them. He does not tell us that Cæsar paints the Celt of his day in "living characters," which even now, after the lapse of nearly 2,000 years,

are most curiously applicable even in the smallest particular to the Celtic population of Ireland, and still utterly inapplicable to the Germans and their kindred. The Celts, he says, are quick and impulsive ("ut sunt Gallorum subita et repentina consilia"); fond of fighting, but wanting in steadiness and endurance ("ut ad bella suscipienda Gallorum alacer et promptus est animus, sic mollis ac minime resistens ad calamitates perferendas"); fickle, unstable, and fond of novelty ("infirmittatem Gallorum veritus, quod sunt in consiliis capiendis mobiles et novis rebus plerumque student"); much given to factions, not only in every State, but in every district and village, and almost in every house ("in Gallia non solum in omnibus civitatibus atque in omnibus pagis et partibus sed pene etiam in singulis domibus factiones sunt"); devoted to their religious observances ("admodum dedita religionibus"); they are completely in the power of their priests, who settle almost all controversies, and whenever a murder or any great crime is committed, etc., the whole matter is submitted to them ("magno sunt apud eos honore, nam fere de omnibus controversiis publicis privatisque constituunt, et si quod est admissum facinus, si cædes facta . . . iidem decernunt"); the priests enforce their judgments by excommunication, and those excommunicated are considered impious; no one will associate with them; they forfeit all rights, offices, etc. ("sacrificiis interdicunt; quibus ita est interdictum ii numero impiorum et sceleratorum habentur; ab iis omnes discedunt, neque iis petentibus jus redditur"), etc.; their funerals are costly, with as much display as their means will allow ("funera sunt pro cultu Gallorum magnifica et sumptuosa"); one of their greatest chiefs feared, or pretended that he feared, the sea ("quod insuetus navigandi mare timeret"); they kept up their courage by shouting and howling ("clamore et ululatu suorum animos confirmabant").

Now, I would ask any Englishman who has lived in the Celtic part of Ireland whether this "keen observer," if he had lived in our day, could have written a description of the actual Irish Celt more exact or more exhaustive than this, and I would ask any Irishman who has ever lived in Devonshire whether he could recognise any one of those traits in the Devonshire peasant.

After describing the manners and customs of the Gauls, Cæsar turns to those of the Germans, which he expressly says were widely different. A few of the German characteristics he describes may possibly be discovered still in some of their descendants: their aversion to priestcraft, their love of field sports, their contempt for hardship and danger, and their very decided liking for animal food.

Next follows, curiously enough, the passage Mr. Huxley has quoted. And here it deserves to be noted that Cæsar does not say there had ever been a time when the Gauls resembled the Germans, but that once upon a time ("fuit antea tempus") the difference between them had been in quite another direction.

Mr. Huxley feels warmly what he says boldly. Men of this temperament are not easily moved to retract an opinion once expressed. But I hope the facts here adduced, and the arguments honestly, however imperfectly, urged, may be held by some of your readers to prove that the honour of ranking with "the Tipperary boys" is as little deserved as it is desired by one who has the privilege to subscribe himself, like your obedient servant,

A DEVONSHIRE MAN.

PROFESSOR HUXLEY ON CELTS AND TEUTONS.

To the Editor of the Pall Mall Gazette.

SIR,—Your correspondent, "A Devonshire Man," is good enough to say of me that "cutting up monkeys is his forte, and cutting up men is his foible." With your permission, I propose to cut up "A Devonshire Man;" but I leave it to the public to judge whether, when so employed, my occupation is to be referred to the former or to the latter category.

"I. As a matter of history," and "II. Geography."—Lappenberg and the Rev. Isaac Taylor are undoubtedly valuable authorities; but most persons who are interested in early English history have made it their business, as it has been their pleasure, to acquaint themselves with Mr. Freeman's remarkable history of the "Norman Conquest of England." If "A Devonshire Man" has not read the first volume of that history he would have done well to hold his peace on such questions as that under discussion. If he has read it, why has he ignored the following weighty passage, which gives the deliberate opinion of a most competent judge upon the very question at issue?—

"During a space of three hundred years the process of West Saxon conquest still went on; step by step the English frontier advanced from the Axe to the Parret, from the Parret to the Tamar; Taunton at one stage, Exeter at another, were border fortresses against the Welsh enemy; step by step the old Cornish kingdom shrank up before the conquerors, till at last no portion of the land south of the Bristol Channel was subject to a British Sovereign. This was conquest, and, no doubt, fearful and desolating conquest; but it was no longer conquest which offered the dreadful alternative of death, banishment, or personal slavery. The Christian Welsh could now sit down as subjects of the Christian Saxon. The Welshman was acknowledged as a man and a citizen; he was put under the protection of the law; he could hold landed property; his blood had its price, and his oath had its ascertained value. The value set on his life and on his oath shows that he was not yet looked on as the equal of the conquering race; but the Welshman within the West Saxon border was no longer a wild beast, an enemy, or a slave, but a fellow-citizen living under the King's peace.

"There can be no doubt that the great peninsula stretching from the Axe to the Land's End was, and still is, largely inhabited by men who are only naturalised Englishmen, descendants of the Welsh inhabitants, who gradually lost their distinctive language, and became merged in the general mass of their conquerors. In fact, the extinction of the Cornish language in modern Cornwall within comparatively recent times, was only the last stage of a process which began with the conquests of Cenweahl, in the seventh century. The Celtic element can be traced from the Axe, the last heathen frontier, to the extremities of Cornwall, of course increasing in amount as we reach the lands which were more recently conquered, and therefore less perfectly Teutonised. Devonshire is less Celtic than Cornwall, and Somersetshire is less Celtic than Devonshire; but not one of the three counties can be called a pure Teutonic land, like Kent or Norfolk."—"The History of the Norman Conquest of England," vol. i, p. 34.

With Mr. Freeman's authority; that of the late Sir Francis Palgrave, in his "Rise of the English Commonwealth;" and, better still, the "Laws of Ine," which every one who will take the trouble may consult for himself in Thorpe's well-known collection, published thirty years ago, in my favour, I see no reason to retract the opinion I have expressed, that the application

of the term "Anglo-Saxon" to the population of Devonshire, as a whole, is absurd.

"III and IV."—I fail to perceive the bearing of the enumeration of proper names, or the discussion of dialect on the question. If I had denied that there has been a strong infusion of Anglo-Saxon blood in Devonshire; or if, I had asserted that the Anglo-Saxons have not been the dominant stock since their invasion of Damnonia, "A Devonshire Man's" line of argument would be intelligible. But, as it is essential to my parallel between Devonshire and Tipperary that this large infusion should have taken place, and that the Anglo-Saxon element should have been dominant, I am perplexed by the Devonian dialectics.

"V."—Under this numeral follows a wonderful passage about "the Teutonic character (as seen in the Germans) on the one side, and the Celtic character (as seen in the French and the pure Irish) on the other."

"The Teutonic character (as seen in the Germans)."—Does "Germans" here include Scandinavians, or does it not? If it does, what is the "character" common to the Norseman, the Dane, and the Suabian?

"The Celtic character (as seen in the French and the pure Irish)."—Who are "the French"? French ethnologists imagine that there is a wonderful contrast between the typical forms of the inhabitants of France, on the two sides of a line drawn from Brittany to Nice. Does the Picard, the Provençal, or the Breton represent the French character? Or is it a new compound formed by the mixture of these discordant elements? And in the latter case how far can it be called Celtic? And "the pure Irish." Who, in the name of the Four Masters, are they? Are they the Milesians, or the Firbolgs, or the Cruithneach, or some diagonal between these three divergent stocks, known only to "A Devonshire Man"?

Finally, when you have caught your "Frenchman" and your "pure Irishman," and put them side by side, what resemblance is there between the two in physical, moral, or mental characteristics?

When your correspondent supplies intelligible and satisfactory answers to these very needful preliminary inquiries, it will be possible to discuss his dictum "That the English character stands midway, or nearly midway, between the two, with more enterprise and *esprit* than the one, more love of law and order than the other." At present I confess it sounds like a platitude, absorbed from a newspaper, and exhaled again, unchanged by even accidental contact with the reasoning faculty, at an agricultural dinner.

The "Devonshire Man's" statistics are excellent. I believe it is quite true that there are twenty times as many Irishmen in the army as in the navy; but I cannot help thinking that the facts that Plymouth, Portsmouth, Dover, Chatham, Sheerness, and Milford Haven, are in England and not in Ireland—that English merchant ships do not, for the most part, clear out of Irish ports—and that, while there is no great dockyard in Ireland, there are numerous recruiting-sergeants, may possibly have as much influence on this unequal distribution of Irish pugnacity as its Celtic lineage. The Spaniards and the Portuguese, again, have been reasonably good sailors, whether for fighting or exploring purposes, in their day. So have the Basques. But, assuredly, a great deal of the same blood runs in the veins of these people, and of those whom "A Devonshire Man" calls Celts.

In conclusion, as to Cæsar.—We all know pretty well what Cæsar says about the Gauls; and that which is well known "A Devonshire Man" has copied out for us at length. But the passage to which I alluded is one that

I cannot help thinking most people forget. And that particular passage "A Devonshire Man," "honestly however imperfectly," urging his argument, suppresses. I therefore trouble you with it:—

"Ac fuit antea tempus, cum Germanos Galli virtute superarent, ultro bella inferrent, propter hominum multitudinem agrique inopiam trans Rhenum colonias mitterent. Itaque ea quæ fertilissima sunt, Germaniæ loca circum Hercyniam silvam (quam Eratostheni et quibusdam Græcis fama notam esse video, quam illi Orcyniam appellant) Volcæ Tectosages occupaverunt atque ibi conederunt. Quæ gens *ad hoc tempus iis sedibus sese continet summamque habet justitiæ et bellicæ laudis opinionem: nunc quoque in eadem inopia, egestate, patientia, qua Germani, permanent, eodem victu et cultu corporis utuntur*; Gallis autem Provinciæ propinquitas et transmarinarum rerum notitia multa ad copiam atque usus largitur. *Paullatim assuefacti superari, multisque victi præliis, ne se quidem ipsi cum illis virtute comparant.*"

According to "A Devonshire Man," the following is a fair representation of the sense of this passage:—"And here it deserves to be noted that Cæsar does not say that there had ever been a time when the Gauls resembled the Germans, but that once upon a time ("*fuit antea tempus*"), the difference between them had been quite in another direction." As you observe, what Cæsar does say is, in brief—that, formerly, the Gauls were better men than the Germans, made war upon them, and threw colonies of their surplus population across the Rhine; that the Volcæ Tectosages, one of their tribes, settled about the Black Forest, and in Cæsar's time still held that region, being a people as frugal, patient, just, and warlike, as the Germans themselves. The Gauls of Gallia, on the other hand, corrupted by the influences of commerce and Roman civilisation, had gradually sunk into the low condition which Cæsar describes. But it is plain from Cæsar's words that he believed the Gauls to have been, primitively, just as good men as the Germans.

Whatever my "temperament" may be, Sir, no one can say that I have ever objected to hard hitting in fair and open controversy. "A Devonshire Man," with no object that I can discern except that of offence, twits me with the attack of my valued friend Professor Sylvester, at Exeter. That matter is not quite settled yet. Mr. Sylvester's arguments, and his well-won fame as a mathematical philosopher, alike demand respectful and patient consideration; and if, after such consideration of the difficult questions between us I find myself in the wrong, I shall surrender without a blush to such an open and loyal opponent.

I confess my feeling is other towards an adversary who hides himself behind the hedge of a pseudonym, to fire off his blunderbuss of platitudes and personalities at a man who has made a grave and public statement, on a matter concerning which he is entitled to be heard. And, while fresh from "tumbling" his man of science, "A Devonshire Man" seems to me to be inconsistent in so haughtily repudiating all kinship with a "Tipperary Boy."

I am, your obedient servant,

T. H. HUXLEY.

Athenæum Club, January 19th.

PROFESSOR HUXLEY ON CELT AND TEUTON.

To the Editor of the Pall Mall Gazette.

SIR,—I do not ask to occupy your space in order to reply to the personal

parts of Professor Huxley's very skilful, very cutting, and very characteristic letter; but I wish to draw attention to the fact that, while professing contempt for my arguments, Professor Huxley has tacitly adopted my conclusion. In his lecture, Professor Huxley had said "that *not only Cornish men but Devonshire men* are as little Anglo-Saxons as Northumbrians are Welsh." He declared "that a native of Tipperary is *just as much*, or as little, *an Anglo-Saxon as a native of Devonshire*." He "absolutely denied that the past affords any reason for dealing with the people of Ireland differently from that which may be found to answer with the people of Devonshire." He calls "the people of Devon and Cornwall *essentially Celtic*."

In his letter to you, he sees fit to admit "that there is a strong infusion of Anglo-Saxon blood in Devonshire"; he even goes further, and allows "that the *Anglo-Saxons have been the dominant stock* since the invasion of Damnonia." Now, this is precisely the point which I endeavoured to prove, and Professor Huxley seems to me scarcely candid in endeavouring to substitute one set of statements for the other. Are the Welsh the "dominant stock" in Northumberland? or Anglo-Saxons the "dominant stock" in Tipperary? If Anglo-Saxons dominate in Devonshire, how is it essentially Celtic?

The weighty passage which Professor Huxley quotes from Mr. Freeman is, as might be expected, in accordance with Professor Huxley's amended views, and directly opposed to his original statements.

It was as early, we are told, as the seventh century that "the West Saxon conquest" began; the English steadily advanced, overpowering all resistance, till they paused for a time on the Tamar (which has ever since remained the western boundary of Devon); and, as the Welsh were not wanting in bravery, and had every incentive to fight, they could only have given way to overwhelming numbers. The extent to which one race eventually supplanted the other, after "this fearful and desolating fight", is a matter of inference rather than a matter of history. Professor Huxley says, in speaking of England at large, "we have absolutely no knowledge of the relative proportions of the two parties." I venture to think, for reasons already given, that the predominance of the Anglo-Saxon stock in Devonshire is still greater than Mr. Freeman seems to suppose. If you will allow me a little further space, I have an apology to make. Professor Huxley has a right to complain that my *concluding* remark on his argument touching the *Volæ Tectosages* is by no means correct. It was the first passage in *Cæsar* to which I turned after reading his lecture, and I regret very much that I spoke from memory, when finishing my letter in a hurry, without referring again to the text.

Professor Huxley, to do him justice, has made the most of my mistake; but his charge of suppression is, to say the least, gratuitous, when the substance of the passage had been already printed in the *Pall Mall Gazette* a few days before, as cited by Professor Huxley himself.

On reading the passage again, with the benefit of Professor Huxley's explanation, the certainty of the wide inference built upon it seems to me open to question. What are the bare facts of the case? That a long time before—perhaps two or three hundred years—a colony of the Gauls had established themselves among the Germans, at some distance from their common boundary, the Rhine; that, at the time when *Cæsar* wrote, this colony differed considerably in character from the original stock. Now, is it not allowable to suggest that the Gallic colony, when completely cut off from

their base, when pressed "*egestate et inopia*," and constantly threatened by the hostile tribes around them, may have been *obliged*, "in the struggle for existence," to adopt the habits and imitate the customs of the hardy, warlike, and frugal people in the midst of whom they lived? Cæsar was undoubtedly a very keen observer, but even Cæsar could not see two hundred yards behind him, and the Gauls, his informants, may have been, like many another Celtic people, "*laudatores temporis acti*." We know the negro in Barbadoes differs widely from the negro at home; that the first English settlers in Ireland became, in a few generations, "*Hibernis ipsis hiberniores*"; that, in much less than three hundred years, the British settlers in America became something very different from, and, as they think, very much superior to, the effete race left behind them.

Professor Huxley asks me some questions. From the manner in which they are put, he can hardly expect them to be answered; but, if you can grant me the space, at the risk of another cutting up, I will do my best to reply.

In all large nations, there are minor varieties of character, corresponding with various commixtures of race; but in most nations which speak the same tongue there is a "*commune quoddam vinculum*," a certain general resemblance, amply sufficient to justify the popular ascription of a distinctive character to each. By "pure", I meant pretty much the same as Professor Huxley by "primitive", Irish; that is to say, the so-called Celtic population, however made up, whenever it contains no admixture of Scotch or English blood. By "French", I meant, *mutatis mutandis*, the same, excluding, of course, the Germans, Italians, and the Basques, who, taken altogether, are not, according to Berghaus, one-tenth of the whole. I am aware that, in speaking of national character, I enter on dangerous ground; nevertheless, I will venture to mention some "mental and moral characteristics" in which I believe modern French and modern Irish, so understood, will be found to agree.

At this very moment, the violence and rancour of the Fenian press and the Fenian abuse of representative government in Ireland are exactly paralleled in Paris. Your own correspondent, I think, speaks of the Fenian French.

If Spain has turned out good sailors, we must not forget the large infusion of Gothic blood into Spain; that "son of the Goth" is the admitted derivation of the Spaniard's proudest title, "*Hidalgo*."

Professor Huxley accuses me of using a "pseudonym"; if I had called myself an ethnologist or a man of science I could have seen some meaning in the charge. I have a full right to the name I choose to use. And, as I love my native county and admire the English race, I hope I may stand excused in endeavouring to prove myself something more than "a naturalised Englishman," as well as your most obedient servant,

A DEVONSHIRE MAN.

ANTHROPOLOGY AND POLITICS: KELTS AND SAXONS.

To the Editor of the Standard.

SIR,—The controversy excited by the publication of Professor Huxley's lecture on Celts and Saxons seems to be widening out and attracting more

and more attention, the *Saturday Review* and the *Spectator* having both joined in the fray. May I ask you to allow me also to put in an appearance.

The position of the dispute may be briefly summarised as follows:—Professor Huxley has stated himself to be, what we all knew him to be, a believer in race in its physical aspects; that is, he acknowledges the hereditary character of differences in stature, skull-form, and colour of hair and eyes; but, on the other hand, he seems somehow to doubt the hereditary transmission of differences of mental or moral constitution. At all events, he denies the influence of such hereditary differences on politics.

The “Saxon Correspondent” of the *Saturday Review* is equally hard to understand. While affecting to make light of race differences, he yet is “astounded” at the supposed discovery of Professor Huxley that the Iberians form an important race element in the British Isles—a discovery new to him, though as old as Tacitus, and as well known as Thurnam can make it.

Thirdly, comes in the “Devonshire Man”, whose views are at least coherent so far as they go, and who makes out a tolerably good case, from history and philology, for the Saxonism of his compatriots, having rather the better of the professor so far, but not attempting to close with him on his favourite ground of physical characteristics.

My own opinions and observations on the Devonshire men appear in the current number of the *Anthropological Review*; but my present business is with Professor Huxley, or rather with the opinions he has propounded.

I have not space to say much about the foundations on which he builds these opinions. Some of them may, perhaps, be solid, though they differ from those accepted by most anthropologists. Thus, he disagrees with the French *savans*, to whose authority he nevertheless appeals in reckoning the short, sturdy, dark inhabitants of central France as Iberians, while the French call them Kelts or Galls. The Kelts of Huxley are the Kimri of Broca and Boudin and Edwards. He supposes the Milesians to have been Iberians, partly because, as he says, they were black-eyed and black-haired; though M^r Firbis, the best authority (if anybody can be called a good authority on so uncertain and obsolete a question), said distinctly that the Milesians were “white of skin, brown of hair,” and that the Firbolgs (usually, but doubtfully, considered to be Kelts) were black-haired. He thinks the Picts were Teutonic: it is an open question, but hardly anybody else thinks so now-a-days.

But the main questions are these three:

- A. Did the Kelts differ as a race from the ancient Germans?
- B. Do the Irish differ as a race from the English?
- C. May differences of race affect politics?

To all these questions I am forced to return other answers than those given by Professor Huxley.

A. If any of the old inhabitants of Gallia were Kelts, according to the professor's own interpretation, the Remi were so. Now, we possess portrait-figures almost certainly meant to represent Remians, on the invaluable monument of the Roman governor, Jovinus, preserved at Rheims. They are tall men, with long faces, and well-marked and somewhat sharp features, very like those of the modern Walloons or Gallovidians.

In Lubach's work on the Dutch are engravings of certain terra cotta heads of the Roman period, dug up near Xanten, in the Lower Rhine country. These resemble the modern Germans of the Lower Rhine, and are not far from being English in aspect. They differ much from the Remi, and cer-

tainly do not represent Italians. Who can doubt that we have in them images of the ancient Low Germans or Frankish types?

As for there having been no difference in complexion, etc., between Gauls and Germans: Firstly, the Gauls *raddled* their hair; secondly, Caligula, wishing to deceive the Roman populace with the semblance of a triumph over Germans, bought the tallest Gallic slaves and *dye'd their hair*. I am almost ashamed to reproduce these hackneyed facts.

The ancient Kelts, then, differed physically from their ancestors of the Low Dutch, as the modern Walloons differ from the modern Hollanders and Westphalians; and so far the probability is that they were not of the same race.

B. Again, I maintain that the Irish, as a race, differ from the English. There may be much Danish blood in Waterford, much Anglo-Saxon blood in Kilkenny, and much Iberian blood in Connemara; but, on the whole, one type predominates in Ireland so decidedly as to be rightly called national; it is a type which most people, rightly or wrongly, call Keltic, which has a long, rather narrow, and low head, with prominent cheekbones, a peculiarly formed lower jaw, and often a prominent mouth, grey eyes, and darkish hair. Men of this type are distinguishable at once in most parts of England, and even of Devonshire, as readily as in Gascons or Swabians.

C. Most of us, without allowing the claims of phrenology and physiognomy to be called sciences, believe in a certain correspondence of physical with mental and moral characteristics. As the average Irishman differs from the average Englishman in the former, so we should expect him equally to differ in the latter respect; and, practically, we find that to be the fact. In short, the difference which was observed long ago—for the old Irish poet sang how “in dulness the creeping Saxon” excelled, but “in beauty and in amorousness the Gael”—is the difference, I presume, still existing; and it is reasonable to attribute the fact, in part, to his physical organisation. This being the case, is it “cant” or folly to say that the mental and moral peculiarities of large masses of citizens must of necessity have some effect on the course of politics?

I am, Sir, yours faithfully,

JOHN BEDDOE, M.D., President A.S.L.

Anthropological Society of London, 4, St. Martin's Place, W.C., Feb. 7.

RACE IN POLITICS: THE “CELT” AND THE “SAXON.”

To the Editor of the Standard.

SIR,—As the controversy about the races which inhabit the British Isles has to-day found a place in your columns, will you permit me to remind you that you favoured me in 1866 with a most flattering review of my work, entitled *The English and their Origin*, and to show my gratitude by asking a new favour? There are two or three points which have not been touched either by my friend, Dr. Beddoe, the President of the Anthropological Society, or by Professor Huxley, the President of the Ethnological Society, and which I trust you will think of sufficient importance to lay before the public.

The fact that there is a difference of opinion between the chiefs of two learned societies, affords some encouragement for the expression of any opinion whatsoever by those who, like myself, have no connection with either society; and I think I shall be able to show that Dr. Beddoe differs

from Professor Huxley rather in his details than in his principles. I was present at the delivery of Professor Huxley's lecture, and the impression on my mind certainly was not that he intended to deny the existence of mental and moral distinctions in various races of men, but that in the case of the English and Irish he could not perceive such distinctions. If this interpretation be correct, the great point of controversy between the two presidents resolves itself into a very simple question. This fairly stated is—Do Englishmen, on the average, display mental and moral characteristics similar to those displayed by Irishmen on the average, when the circumstances are similar?

Dr. Beddoe says nothing about circumstances, and Professor Huxley only predicts what Englishmen would do under similar circumstances to those of the Irish. Neither of them adduces facts on both sides. With your permission, I propose to do so, and to take the "agrarian outrage", with its concealment, as the crucial test to decide whether the best marked peculiarity of the Irish character is inherent in race or is the result of circumstances. I think I shall be able to demonstrate that it is the result of circumstances.

After the Norman conquest, and possibly even before it, in time of the Danes, the "hundred" was made responsible for certain offences committed within its limits, and the reason for this strange device was, that it was the custom of the English to favour all criminals who murdered one of the new settlers, and, if possible, to screen them from the law.

From the records of the English Exchequer, together with some other important documents preserved in the Public Record Office, but not searched by historians, it is possible to arrive at the number of murders committed per annum, and at the gain to the revenue both from murders and from concealments. The Frenchmen, as the Normans called themselves, suffered severely at the hands of the Englishmen. Out of a population reduced by continual wars, by the devastation of whole districts, and by many other causes, there were more than five hundred persons murdered in England alone every year, and concealment was a common offence many generations after the Norman conquest had to all appearance been completed. The English bowmen with whom Richard met Saladin had precisely the same feeling towards their "French" rulers as the Irishmen who sometimes fight battles for the English have towards the rulers sometimes called "Anglo-Saxons" or "Teutons." Professor Huxley has brought out in strong relief the policy of Cromwell towards the Irish, and told us *a priori* that had Englishmen suffered in like manner they would not have acted differently. It is seldom that an opinion can be verified, as I can show that this opinion has already been verified, not by the burning rhetoric of some partisan writer, but by the cold hard facts of the tax-collector, recorded without a suspicion of the purpose to which they might one day be applied.

I was certainly very much surprised to find Dr. Beddoe drawing the old distinction between the dulness of the "creeping Saxon" and the opposite characteristics of the soaring Gael. One would have thought that the eighteenth and nineteenth centuries, in which nearly all the greatest inventions have risen from England to illuminate the world, would at least have vindicated the Englishmen from the charge of dulness. If this is all that can be said to prove the radical difference between Englishmen and Irishmen, I sincerely trust that there is nothing to prevent us from regarding an Irishman as "a man and a brother."

The other points on which Dr. Beddoe joins issue with Professor Huxley are physical characteristics and the definition of terms. I may perhaps be prejudiced because Professor Huxley has done as I have done in finding fault with the old definitions, and because he has adopted my conclusions in regard to the non-Teutonic character of the English nation as a whole, but I am quite unable to follow Dr. Beddoe's argument when he says the Irish differ from the English in having long heads and darkish hair. I thought that if any one fact was established in the description of races it was that the English possess as a rule those very characteristics. I can hardly believe that Dr. Beddoe himself would seriously deny the fact.

I do therefore hope that we shall cease to regard the Irish either as angels soaring too high above us, or as an inferior race, somewhat like "niggers," and so to give them just cause of complaint.

I remain, Sir, your obedient servant,
New University Club, Feb. 10.

L. OWEN PIKE.

ANTHROPOLOGY AND POLITICS.—KELTS AND SAXONS.

To the Editor of the Standard.

SIR,—I observe in to-day's *Standard* a letter from Mr. L. O. Pike, who, referring to my own letter in your issue of the 10th, takes up the defence of Professor Huxley's position. He states that, whereas I say the typical Irishman has a long head and darkish hair, he has found the same characteristics in the English; and he implies that no physical difference has been shown to exist between the two.

Now, I did not base the physical distinction on the long head and dark hair of the Irish. These were only two of seven or eight features in the picture I drew of the average Irishman, which, again, was itself imperfect, because my intention was simply, by a rapid sketch, to call up a familiar image, but not to dwell on all its details. Hindus, negroes, and native Australians, are all long-headed and dark-haired, but few have hitherto ventured to assert that all these are alike in political capacity *inter se*, or to ourselves. Moreover, Englishmen are not, with my friend Mr. Pike's leave be it said, generally dark-haired, as that word is understood by most people. They are, on the whole, intermediate in colour of hair, as in so many other respects, between the generally fair Dutch, Frisians, and Danes, and the generally dark Welsh, Cornish and Irish. On this point I believe both my opponents will allow that I may speak with some authority. It is true that dark hair, and other non-Saxon (though not Irish) characteristics, do preponderate in several counties, of which Devon is one; and this is one of the few facts I can see that at all favour Professor Huxley's views.

For another curious point of physical divergence between the English and Irish, apparently dependent on blood or temperament and not on circumstances, I refer the reader to the *British Medical Journal* of the 5th inst., where he will find it stated by an excellent authority that a certain ocular disease follows up the latter people in all parts of the world, while the former remain almost untouched by it.

In the second place, Mr. Pike affirms that if the Irish peasant shoots his landlord in the reign of Victoria, the English peasant did much the same in that of William the Conqueror.

Secret assassination has in most countries and ages been the weapon of races or classes who have been oppressed, or have fancied themselves so, by a dominant caste. Under peculiar circumstances it has attained the proportions of a formidable system in Ireland, as something like it has done in Sheffield; but I fail to see in these facts any proof that the Sheffield grinder and the Irish cottier are of the same race.

Thirdly, Mr. Pike is scandalised at the idea that the English, the most inventive of people, are a "duller" race than the Irish. I must confess that I thought I should have had all the world on my side on that point. Is it really necessary to prove that the Irish peasant is quick-witted and eloquent, while the English clown is as heavy as he is industrious and plodding? Inventiveness is quite another affair. The Germans, whom Mr. Pike is fond of abusing for their stupidity, dispute with ourselves the credit of being the most inventive of nations.

I remain, Sir, yours faithfully,

JOHN BEDDOE, M.D.

Anthropological Society of London, 4, St. Martin's Place, February 14th.

A MAN half white and half black has arrived in New York from Arkansas. One entire side of his body is almost black as ebony, while the other side is of the pure Caucasian hue. There is no humbug about the man. He seems very intelligent, and is desirous of avoiding public observation.

EXTRAORDINARY RECOVERY AFTER SAW-WOUND OF THE SKULL AND BRAIN.—A case, almost incredible, of extensive wound of the skull by a circular saw, is recorded in the *Pacific Medical and Surgical Journal*, May 1869. It was under the care of Dr. C. A. Folsom. The patient was a man, forty years of age. The wound extended from just above the nose in front to the occipital protuberance behind, and measured nine inches. It was rather on the left side of the middle line, and passed (on measurement) a depth of three inches into the brain, and was thought to reach the base of the skull. The two halves of the skull fell apart more than an inch, and a tourniquet was applied round the head to hold them together. The brain-substance was not sensitive. The scalp-wound healed nearly by first intention. There were no symptoms of any sort. No medicine was given. In three weeks the man got up, in six weeks resumed his occupation, and has continued at it for five years. The saw was a large one, revolving very rapidly. The man scarcely felt the cut. There was no concussion, no shock to the brain.

IMMUNITY OF A MONKEY TO STRYCHNINE.—Surgeon Theobald Ringer, of the 7th Cavalry, at Nowgong, communicates an attempt to poison a lingoer (*Presbytis entellus*) with strychnine. One grain was concealed in a piece of cucumber, which the animal ate. After waiting some time, and finding no effect produced, three grains were given in the same substance, and the monkey appeared to relish the meal. Afterwards, some cyanide of potassium was mixed with sugar and placed between the pieces of bread; but, on smelling, the animal threw it away, and nothing would induce him to touch it. To test the strychnine, which had been some time in his pos-

session, Dr. Ringer administered three grains to a dog; in twenty minutes, the usual symptoms commenced, and it died in forty minutes after swallowing the poison. We know there are many vegetable poisons that act very differently on the lower animals to their effects on man. For instance, the immunity of pigeons to opium is pretty well established; goats can eat tobacco in large quantities, and rabbits can be fed on leaves of belladonna, stramonium, and hyoscyamus, without detriment; but the toleration of this monkey to strychnine is novel. We have not yet been able to gather any information on the subject beyond a few lines in a local paper, in which it is remarked of a mischievous monkey, "a druggist tried to poison the brute, but could not, as it seemed to eat all sorts of poison with impunity." We hope shortly to hear the results of other experiments; but we should be very glad to hear more on the subject from any officers who would take up the question.—*Indian Medical Gazette.*

THE "BIG MOUND" OF ST. LOUIS A NATURAL FORMATION.—At a recent meeting of the St. Louis Academy of Science, Professor Smith read a paper concerning the famous mound until recently existing at St. Louis, hitherto supposed to have been the work of the "mound builders." It was recently demolished to grade the track of the North Missouri Railroad. Professor Smith says:—"More than twenty years ago, I was convinced, from personal observation, that the "Big Mound" was a natural mound, and owed its elevation to natural causes, and the following were my reasons, which its demolition has but served to strengthen and confirm. 1. If it was artificial there must have been design in building it. It would puzzle the most imaginative antiquarian to find a motive powerful enough to induce a nation to expend so much labour as must have been required to heap up this vast mound of earth, without a more manifest design than is here apparent. As a point of look-out, it did not command a wide extent of country. As a fortification it was worse than useless. There are many other elevations in the vicinity which, so far as we can see, were much more available. 2. There is no proof that it was a place of sacrifice. No charred remains of either bones or wood have been found. True, some bones and a few Indian ornaments have been exhumed; but their position gave no evidence of design in placing them there, other than that of ordinary burial as practised among Indians at the present day. All that have been found, either of bones or trinkets, were superficially buried; indeed, some bodies even have been buried in the mound within the memory of men now living. Exaggerated stories have frequently floated about from mouth to mouth, and from newspaper to newspaper. As a sample, I give one of the most recent origin. While the mound was disappearing under the shovel of the labourer, it was reported that a large quantity of perforated bone discs had been discovered 25 feet below the top of the mound. I inquired of Dr. Briggs, who found them, and he told me that they lay about four feet below the surface. 3. Of the bones exhumed, none seem to date further back than a few years subsequent to the foundation of the city. Indeed, nothing that I have ever seen, which was found in the "Big Mound", has the appearance of dating further back than the time of the Indians contemporary with the settlement of the country by the whites. 4. If such an immense heap of earth were piled up by human labour, the workmen must have had tools of some kind; but no remains of such have ever been found either in the "Big

Mound" or its vicinity. 5. It has been said that the "Big Mound" must be artificial because so many things have been found in it. Instead of so many, the wonder is that so few were brought to light when it was dug down and carted off. No pieces of pottery, no remains pointing to the agency of fire, no remarkable specimens of Indian ornaments or implements except a few arrow-heads common wherever the aborigines roamed—nothing, indeed, more than has been found in thousands of Indian graves in similar localities elsewhere. 6. If the remains of this mound are evidences of its artificial character, then much stronger ones can be found in favour of a similar origin for the bluffs of the Mississippi and Illinois. The fact that the "Big Mound" was terraced on the eastern side proves nothing, for equally as curious and regular terraces may be found on almost any large water-course in the west flowing through similar soil. Evidently then, if we would establish any proof that this mound was artificial, we must bring forward better evidence than any found in it."

IN *Ausland* for January 1st is a very interesting representation of a rough sketch of a mammoth (*Elephas primigenius*), found on a bone of the mammoth itself, exhumed from the Madeleim cave, in the department of Dordogne.

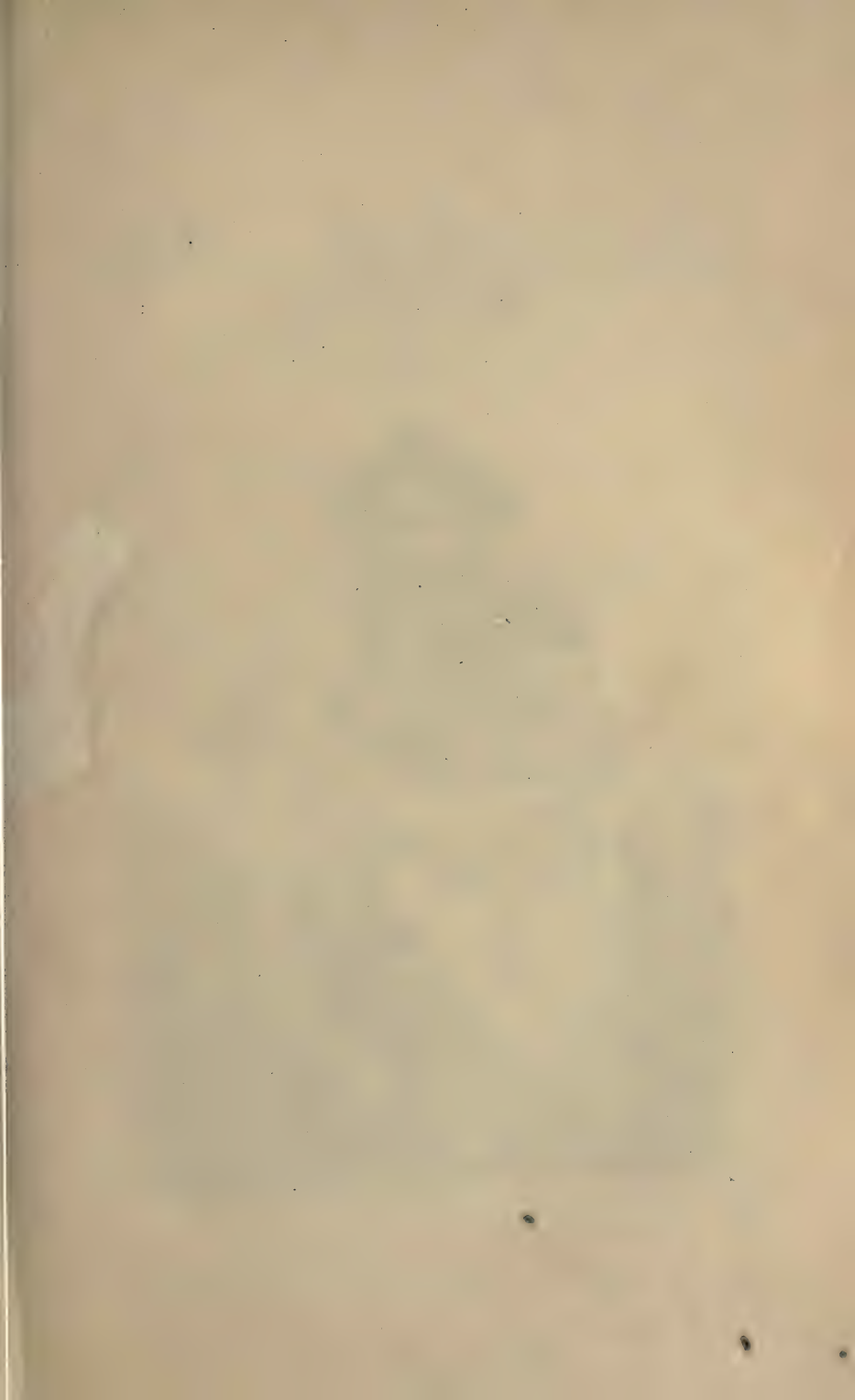
ANTHROPOPHAGI.—We learn from the *Institut* of the 24th January that M. Quatrefages has presented a note to M. Garrigon on certain bones of man that he has found in a cave, and which have been split longitudinally, apparently to permit them to be used for various domestic purposes. He cites them as constituting an additional proof that the prehistoric races, who were dwellers in caves, were anthropophagous.

FAUNA OF ROUND ISLAND.—The remarkable discovery has been made by Sir H. Barkly, Governor of Mauritius, of four species of snakes and several species of lizards, on Round Island, a small island, twenty-five miles from Port St. Louis, and separated by a sea only four hundred feet deep, no animals of that description being natives of the Mauritius. The flora was also found to be, to a great extent, specifically distinct.—*The Academy*.

A SCLAVONIAN ACCOUNT OF CREATION.—The current issue of the Literary Society of Prague includes a volume of popular tales collected in all the Slavonian countries, and translated by M. Erben into Czech. We extract the shortest: "In the beginning there was only God, and he lay asleep and dreamed. At last it was time for him to wake and look at the world. Wherever he looked through the sky a star came out. He wondered what it was, and got up and began to walk. At last he came to our earth; he was very tired; the sweat ran down his forehead, and a drop fell on the ground. We are all made of this drop, and that is why we are the sons of God. Man was not made for pleasure; he was born of the sweat of God's face, and now he must live by the sweat of his own: that is why men have no rest."

At the forty-third meeting of the German Scientific and Medical Society at Innsbruck, in September last, Dr. Karl Vogt (of Geneva) summed up the main results of the recent Congress of Palæontologists at Copenhagen. After vindicating the place of Primeval History as one of the exact physical sciences, he divided the subject under three headings. 1. *The Age of the Human Race*.—There is no longer any doubt that man existed in Europe—probably the latest peopled part of the world—at a time when the great southern animals, the elephant, mammoth, rhinoceros, hippopotamus, were found there, which are now extinct. Even where no human remains or tools have been found, the acute researches of Steenstrup have found traces of man by distinguishing the bones which have been gnawed by animals from those which show signs of having been split by man for the sake of the marrow, or otherwise handled by him. It is equally certain that posterior to the advent of man the Straits of Gibraltar, of Dover, and the Dardanelles, as well as Sicily and Africa, were still united by isthmuses; the whole Mediterranean area was separated from Africa by a sea in the basin of Sahara; the Baltic was a sea of ice covering the whole of the low levels of North Germany and Russia, and cutting off Finland, Sweden, and Norway, into what would have been an island but for its junction with Denmark. The astonishing researches of Lartet in France, of Fraas in Germany, and of Dupont in Belgium, have proved that this period was succeeded by another, in which men hunted in the countries of Central Europe the reindeer and other arctic animals, in an arctic climate, and surrounded by an arctic flora. We may also speak with confidence of the migrations of these primæval races; the human contemporaries of the most ancient animals, the mammoth, the cave-bear, and the cave-lion, can only be traced in the western and southern parts of Europe. In Central Europe and Switzerland, their remains are unknown. In the “reindeer period”, again, we find man in Switzerland and in Suabia; but no trace of him in North Germany and Denmark. 2. *The growth of primeval civilisation* is shown by the striking similarity of the tools dug up in caves of the “reindeer period” in the South of France with those of the Esquimaux and Greenlanders collected in the Museum at Copenhagen. Our primeval Europeans were, no doubt, savages in the fullest sense, even those with a white skin being distinctly inferior, so far as we can make out, to the lowest type of modern savage, the Australian. They were cannibals, as has been lately shown by researches in Copenhagen. The lake villages in Switzerland, on the other hand, show that agriculture and the pastoral life flourished whilst the metals were still unknown, and that the introduction of them was connected with barter and trade. We are acquainted at present with a number of primeval manufacturing localities, and of the commercial routes which were used in the rudest times. It can be shown, moreover, that our civilisation came not from Asia, but from Africa; and Heer has proved that the cultivated plants in the Swiss lake villages are of African, and, to a great extent, Egyptian origin. 3. *The Corporeal Development of Man*, and the different families, kinds, and races of men, have been far less investigated than the corresponding divisions of the ape type. In many places, the skulls discovered have been few; but less than a year ago a whole cemetery of more than forty human skulls and skeletons, belonging to the “reindeer period”, was discovered near Solutri, in France. We, therefore, now have considerable material for arriving at conclusions respecting primeval man of this period. There can be no doubt that man approaches more nearly in bodily conform-

ation to the animal, and especially his nearest relative, the ape, the lower his stage of culture. As time goes on these characteristics gradually vanish, the forehead becomes more upright, the skull higher and more dome-shaped, and the projecting countenance gradually recedes under the skull. These changes are the result of man's conflict with his circumstances, and to the mental labour which that conflict entails.





TODA MAN.

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ART. 1.—THE AIM AND SCOPE OF ANTHROPOLOGY.

It might be thought that, after the existence and active working in England, for seven years, of a Society devoted to the study of Anthropology, there can be little question as to the real aim and scope of the science. It is, nevertheless, unfortunately true, that there is not a perfect understanding on this subject, even among the students of anthropology themselves. It is to be expected that they will not always agree as to the inferences to be deduced from accepted data; but it is otherwise as to the object of their science and the limits within which their inquiries are to be carried on. I cannot better explain the reason for the uncertainty on these points which does really exist than in the words used by Dr. Broca, when seeking to define Anthropology. He says that, to define this science as the natural history of mankind, "might, in most minds, give rise to the idea that it is a purely descriptive science; that it confines itself to distinguish and classify the various races according to their physical type; and this interpretation must be carefully guarded against, and the more so since there has been a time when anthropology, still in its infancy, was confined within such narrow limits."* The last sentence would have been more exact if it had said "practically confined"; for it is only just to the memory of the late Dr. James Hunt, the founder of the Anthropological Society of London, to say that, in his first introductory address, he declared anthropology to be "the science of the whole nature of man."† Dr. Broca is, however, practically correct, and the

* See *Anthropological Review*, vol. v (1867), p. 195. † Ditto, vol. i, p. 2.

idea he combats is yet too prevalent among anthropologists. It has, certainly, a negative rather than a positive effect on the science itself; but, if its students differ among themselves, there can be no wonder that people at large very often form most erroneous notions, not only as to the ideas of anthropologists, but also as to the object of their inquiries. There is a very general notion afloat that their belief in the ape origin of man is so strong as almost to amount to a monomania. It is supposed, moreover, by many who, to say the least, ought to know better, that the avowed aim of anthropology—the knowledge of man—is only a cloak for an insidious attack on Christianity, if not on all religious belief. The prevalence of the former notion is, perhaps, excusable, considering the prominence which some writers have given to their opinions as to the origin of man. These opinions are, however, purely personal, and do not belong to anthropology itself. It is different with the notion that the aim of this science is the subversion of Christianity and religion in general. Such an opinion shows how foreign from the minds of those who entertain it, and who yet profess to be guided in their thoughts and actions by the spirit of truth, is the idea of loving truth for its own sake. The notion really arises from a dread of the result of inquiry—a dread which betrays a want of faith in the security of Christian belief. Ignorant of the real foundations of Christianity, and uncertain how far they may be affected by scientific research, every fresh conclusion of science is viewed by such persons with suspicion, and treated as an attack on Christianity, if it appears in the least to extend the domain of nature at the expense of the supernatural. Anthropologists could afford, so far as they themselves are personally concerned, to allow the notions I have mentioned to pass unnoticed. This, indeed, they would do, if they formed a mysterious brotherhood, possessed of certain secrets to be revealed only to the initiated. But this is not so. They are associated only that they may the better study certain phenomena, which are of the utmost importance, because they deal with man himself. They thus concern all men; and so impressed are the students of this science with its value, that they wish all men to study themselves as members of the great human family, and thus to become practically, if not in name, anthropologists. Before such a result can be attained, however, it is necessary that false impressions should

be removed; and it is with the object of doing something towards this end, that I have determined to point out what I conceive to be the real aim of anthropology. It is true that this has already been done to some extent by other writers,* but with a different object. They have sought to guide and inform those who were already students of the science; while, on the other hand, my chief, although not only object, is the somewhat negative one of removing from the minds of strangers the erroneous notions of it they entertain.

It is usual, when treating of a science, to begin by giving a concise definition, declaring the meaning of the term expressing it, or stating the limitations of its inquiry. This could hardly be done here, however, as the very object of the present article is to furnish data for a satisfactory definition of anthropology. I may state, however, that Mr. Bendyshe, in his excellent *History of Anthropology*, defines this science as that which "deals with all phenomena exhibited by collective man, and by him alone, which are capable of being reduced to law";† while Dr. Broca declares it to be "that science which has for its object the study of the human group, considered in its *ensemble*, in its details, and in its relations to the rest of nature."‡ I refer to these definitions, not because I think them to be strictly accurate,§ but because they bring out clearly the important fact that anthropology has relation chiefly to mankind *as a whole*, and is concerned with individual man only so far as he forms part of that whole. Of course, as Dr. Broca observes, "a collection of individuals cannot be studied in its *ensemble*, if we do not commence with the study of the individual type which forms the unit of the num-

* See particularly Dr. J. Hunt's addresses before the Anthropological Society of London, and the article by Dr. Broca above quoted.

† *Memoirs of the Anthropological Society of London*, vol. i, p. 335.

‡ *Loc. cit.*, p. 193.

§ It appears to me that Mr. Bendyshe's definition is defective, not only in that it implies that some of the phenomena presented by man cannot be reduced to law, but because the phrase "by him alone" excludes from consideration the fundamental phenomena of human being, which, it cannot be doubted, are exhibited also by the inferior animals. The definition given by Dr. Broca is, on the other hand, too large. How far the relation of man to "the rest of nature" comes within the scope of anthropology, is questionable. Moreover, the phrase, "in its details", is not sufficiently precise, as the phenomena presented by man as an individual belong chiefly to other sciences, the generalisations of which are made use of by anthropology.

ber" (p. 198). The latter study, however, has more especial reference to the *differences* which characterise man when compared with other natural objects; the identification of these differences resulting in the determinate idea of "man" in his individual aspect. Anthropology, on the other hand, has rather to do with *resemblances*—its general aim being the generalisation of the phenomena which are displayed by mankind as a whole, so as to discover the laws of human being, in relation to its continued activity, past, present, and future, as well as, if possible, to define the nature of that being itself. When "man", as distinguished from other organic existences, has been clearly defined, the idea thus obtained requires to be extended, so as to embrace all those who answer to the definition. We have here the starting point of anthropology.

In the course of the inquiry as to which of the organic beings inhabiting the earth present the characters associated with the idea of man—or, at least, such of them as, from their importance, may be treated as indispensable to humanity*—it will be found that some of these are not constant in the forms they take. This is especially the case as regards the physical organism, the varying characters of which supply the ordinary materials for a classification of peoples. As furnishing the external differentiae of race, or, rather, as aids to classification, the secondary characters thus ascertained are undoubtedly of great value to the anthropologist. They furnish, moreover, data for certain generalisations, as to the influence of climate and other conditions of existence, which, however, concern physical science more immediately than anthropology itself.† Of the secondary characters, the most important are those which relate to the skull and its brain contents; their value arising, independently of their special connection with the classification of peoples, from the dependence on them of the various phenomena of mental activity. It is of the greatest moment that the nature and form of this dependence should be properly understood. The

* It is evident that a *perfect* definition of man is almost impossible without a knowledge of the differences of race.

† It is the office of ethnography, more especially, to collect these data, and to describe the phenomena concerned. Doing this, ethnography is a valuable aid to anthropology; but, in itself, it is evidently only a subdivision of geography, and one to which anthropology bears the same relation as does geology to the phenomenal description of the earth's surface.

brain being the chief seat of mental phenomena, its study in this relation must yield the most reliable results to the anthropologist. These results, however, ultimately concern the mind itself, and their chief value arises from this fact. Such may be asserted also of other physical characters. Such questions as that of acclimatisation derive their importance to the anthropologist, not so much from their relation to the bodily organism, as from the fact that through this organism they influence the mind, affecting the character of its phenomena, or putting a stop to its activity altogether.

I shall have occasion to refer again to the value of physical characters, in relation to classification. I have dwelt thus slightly on them here, because they have already been fully considered by other writers, and also because they appear to me to be strictly subsidiary to the mental characters associated with them. It is, indeed, only when the importance of the mental products of the organisation is recognised that a perfect science of man is possible. Mr. Luke Owen Pike, therefore, has well said, that "without psychology there is no anthropology."* The anthropologist, however, has nothing to do with the formation of a science of mind; and it is only when the student of this science, "extending the field of psychology, observes the differences existing between peoples and races in reference to intellectual power, perfectibility, sociability, artistic, scientific, literary, industrial, religious, and political aptitudes",† that he becomes an anthropologist. It is, then, with the *products* of thought, and not with the laws of its operation, that the science of man is especially concerned. The various forms which these products take need not be fully considered; the less so, as they may be so classified as that probably every phase of mental activity may be brought within one of four chief divisions. Of these, one embraces *social* phenomena, and the others respectively those of *language*, *religion*, and *morals*. The consideration of each of these classes of phenomena is of the utmost moment to the student of anthropology, not only because of the valuable data furnished by them for the classification of peoples, but also because they exhibit, more or less directly, the operation of the mental faculty peculiarly distinctive of man. As to their value

* *Journal of the Anthropological Society of London* for Jan. 1870, p. xi.

† See Dr. Broca's article above cited, *Anthropological Review*, vol. v, p. 199.

as aids to classification, there is much diversity of opinion. Mr. Pike says expressly of philology, that it "is of very little value in the discrimination of race."* This opinion, however, is hardly sustainable; and Dr. Broca's estimate must be received as much more nearly correct. This distinguished anthropologist says that philological data are "most precious auxiliaries of anthropology; but the furnished information cannot be looked upon as a decree. The results of philology are positive; they even possess a degree of precision, certainty, and simplicity, rarely found in the study of physical characters; but these results, once acquired, require investigation, which the anthropologist only is able to give with any certainty."†

This opinion, expressed in other words, as that "when there is a contradiction between linguistic and physical facts, the preference must be given to the latter", may be accepted with some limitation. It must be remembered that, although the physical type is, *when the conditions of existence remain unchanged*, more permanent than the *totality* of a language; yet, when those conditions are altered, the co-relation between an organism and its habitat requires that the physical form itself, if the organism continues to exist, should also be altered in due ratio. To judge, therefore, of the degree of permanence of physical type, by the agreement of present peoples with those represented on the ancient monuments of Egypt,‡ is somewhat fallacious. The conditions under which the peoples thus figured (except perhaps the Jews) have lived, during the period since those representations were made, do not appear, so far as we can judge, to have materially altered, and little change (if any) can, therefore, be expected in the physical type exhibited by the peoples themselves. The same rule must be applied even to the inhabitants of great continental areas, such as Australia, America, and Africa; the general geographical conditions of which—as to Africa, south of the Equator, at least—have remained constant for a vast period of time. Nor can a different law be applicable to such a people as the Jews. If the physical type of this people has remained unchanged, it can only be because the conditions of their existence have but slightly altered. It should be considered that, although the

* *Loc. cit.*, p. ix.

† *Op. cit.*, *Anthropological Review*, vol. vi, p. 45.

‡ Ditto, p. 43.

Jews have been scattered abroad to countries presenting the greatest diversity of climate and soil, yet they have retained most of their old customs and modes of living, and have, as a rule, kept themselves, by internal marriage, free from intermixture with other peoples. An exactly analogous case is presented by the Gipsies, showing that it is not merely a change of locality that is required to cause an alteration of physical form. As to both Gipsies and Jews, however, I much doubt whether they have been thus affected so slightly as is usually supposed. The general type, doubtless, remains the same as at first; but special characters have been affected, so that true national varieties have been formed both of the Jew and of the Gipsy. It appears, indeed, to be a well-established fact, however it is to be accounted for, that two types, the dark and the fair, are distinguishable among the Jews,* as among so many other peoples. Another consideration, which must somewhat qualify Dr. Broca's conclusion as to the relative values of physical and linguistic characters in the classification of peoples, is that the change in language, which no doubt is continually in progress, is not by any means so radical among uncultured peoples as he supposes. Even when almost completely transformed in one respect, a language may remain fundamentally unchanged. Examples could be cited, especially among American peoples, of languages whose vocabularies have become entirely altered, while their original grammatical character is retained intact. Such a change as this takes place usually under continuing and peaceful conditions; and it is only in the case of intermixture of peoples, which may result in the introduction of words from a foreign source, that a mere change of vocabulary causes any uncertainty in scientific deduction. It is, therefore, among primitive peoples—those who have probably not been much affected by intermixture—that the language test is the most reliable; and it is astonishing how permanent among these peoples certain linguistic characters are.† Even when one people has had imposed upon it the language of another, a careful philological study will throw much light on the circumstances attending the change, the more valuable if—as appears probable, although not

* See memoir on this subject by Dr. J. Beddoe, Pres. A.S.L.

† I hope to furnish evidence in support of this statement in a later number of the *Journal of Anthropology*.

yet fully established—the mixed physical type has a tendency to revert to that of the most influential stock. In every way, therefore, linguistic researches are of the greatest importance to anthropology as aids to classification; and where there have been great geographical changes, with co-relative alteration of other physical conditions of existence, they may furnish truer tests of racial affinity than even physical characters themselves.

When, however, the *absolute* importance, as compared with each other, of physical phenomena and those of language, and not merely their value as tests of affinity, is considered, there can be no question as to which is entitled to the first place. While the latter, as the product of mental activity, reveal to us the inner being of man, the former are valuable chiefly, except so far as they condition this mental activity, as aids to external classification. Classification is, however, not the ultimate aim of anthropology. It arranges the materials necessary for the higher generalisations of the science; and states the problems which require solution, but it does not itself supply this solution. No doubt, a perfect classification requires the study of complex phenomena, and the recognition of various natural laws according to which the forces of nature affect man, causing those conditions of existence, in whose influence, direct or indirect, we must probably seek the origin of distinctive physical characters. It will be found, however, that the chief result of this study will be to modify the supposed importance of such characters, bringing closer together peoples who at first sight would be assigned to different races or types. It will, in fact, lead to the proof that physical characters are really secondary, and thus establish the more clearly that the ultimate aim of anthropological research must bear relation, not so much to the physical organism, as to that which reveals itself in the products of mental activity. The value of those characters as data for classification should not, however, be lost sight of; nor yet the influence which the skull and brain more especially exercise over mental phenomena themselves. Dr. J. Barnard Davis, who has done so much for this branch of anthropology, while asserting that “the skull and the brain will still always remain the purest bases of the classification of human races”, yet asserts that “unless there are some essential differences in the organisation of the brain, which probably may always elude human scrutiny, there is no more

certain means of classifying the different races of men than by taking the whole of his organisation into account, with colour and form, and especially, primarily, and chiefly, his cranium, the form and dimensions of his skull, and his mental and moral faculties."* The co-ordination of those faculties with the brain has, moreover, a further value, inasmuch as mental phenomena are almost wholly dependent on the brain for their special manifestations.

Of the several classes into which mental phenomena have been already divided, probably those connected with the *social* life were the earliest to show themselves. These phenomena form a very important branch of anthropological inquiry; for they embrace the whole course of human art progress in the widest sense, and, incidentally, that of scientific discovery, of which art is the practical expression. The invention of visible symbols for articulate speech, the use of which has been so effective as an aid to civilisation, is especially valuable in this relation; while civilisation itself, in its limited sense, may be defined as the perfect expression of art production. This phase of anthropological inquiry, therefore, has to do, directly or indirectly, with all the phenomena of mental activity, except those connected with *language, religion, or morals*. It may, indeed, be said to embrace all the *intellectual* products of the mind, as distinguished from those which are more strictly instinctive or emotional. It is, however, only in relation to peoples or races, and not to individuals, that anthropology can prosecute this inquiry, the first object of which must be to trace the sequence of intellectual phenomena, and the line along which they have presented themselves. Moreover, the mere discovery of the connection of phenomena is not enough. These are useful to anthropology only as data by means of which the laws of intellectual development may be determined, and the source of mental activity itself may be ascertained.

The most practically important product of human thought is *language*. By this is meant, not merely articulated speech, but the use of language symbols, whether mental, oral, or visible. These modes comprise every use of the word-symbols which compose what is sometimes called "artificial language", and distinguish it from the *natural* language, expressed by the features,

* *Anthropological Review*, April 1870, p. 196.

the voice, and the attitudes of the body, which animals possess in common with man. That the intellectual culture attained by mankind has been almost wholly due to the use of symbols of thought is unquestionable; and language may, therefore, be described as the special mental *instrument* of human progress. From this fact, it is evident how useful to anthropology is the discovery of linguistic affinities, not merely as an aid to classification, but also that the laws by which languages have been developed may be ascertained. The latter result has relation to language as a thought product; and, thus viewed, it is necessary that its relativity to the mind itself, as well as to other mental phenomena, should be traced. Hence the importance of determining, if possible, the origin of language—whether it is a purely intellectual invention, or the result of a semi-intellectual imitation of natural sounds, or whether it is the natural response of the emotional nature to the activity of external forces. The old notion that formed language was a divine gift to man is now exploded, but, if it were not so, anthropology could not seek for its origin outside of man himself. One truth, at least, is almost self-evident. If primeval man had a *potentiality* for the intellectual culture presented by his descendants, he must have had a capacity for the development of the instrument by which that culture has been attained. That he could not have actually invented the “roots” to which all languages may undoubtedly be mediately reduced, is proved by the consideration that such an origin would require the use of the very language symbols supposed to have been invented. The same objection applies, though in a less degree, to the onomatopoeitic origin of word-roots. It would be impossible *knowingly* to imitate a natural sound without the exercise of thought by means of language symbols. To do this, however, unknowingly would be a purely instinctive operation in response to the activity of external media. Hence, we may suppose primeval language to have been the external expression of internal emotion, and the discovery of its real source would doubtless throw great light on the mental nature of man himself, as the tracing of its evolutionary progress will furnish a valuable test of that of the human intellect.

The third series of mental phenomena to be referred to consists of those which concern religious belief and practice. It is chiefly in relation to this phase of anthropological inquiry that so much

misunderstanding exists as to the real aim of anthropology. Those who are imbued with the idea that Christianity is not only supernatural in its origin, but also totally independent of all other religions, look upon every attempt to give a natural explanation of any of the phenomena which have come to be considered as belonging, directly or indirectly, to this form of religious belief, as an assault on Christianity itself. If, therefore, the prejudices arising from this notion are to be consulted, it is impossible to treat in a legitimate manner even of the so-called heathen religions of antiquity. This may be shown by reference to the fact, that, although the Jews, as a body, refused to receive Christianity, yet Christians have not only appropriated most of the Hebrew religious teaching, but have founded their most fundamental dogma on one of the very earliest portions of Hebrew scripture. It is well-known, however, to students of religious belief that Mosaism, in its fundamental ideas and in its ceremonial, agreed almost perfectly with the other prominent religions of antiquity. Undoubtedly, a kind of monotheism was preserved among the Hebrews better, on the whole, than among other peoples. It is impossible, however, to explain the origin of Hamitic idolatry, and of the ideas on which it was based, without coming into contact with Mosaism. To prevent the scientific student, therefore, from inquiring into the nature and origin of the religious notions of the Hebrews, as is attempted by Christian advocates, is to exclude him from almost the whole domain of religious phenomena; the more so as it is becoming more and more evident from day to day that there is a connection, fundamental or otherwise, between these phenomena as displayed among both Hamito-Semitic and Aryan peoples.

The absolute necessity to the due understanding of human civilisation of a critical examination of religious phenomena, is shown by the well-known influence which religion had among the civilised peoples of antiquity, not only over every phase of art-culture, but also throughout the whole range of their social life and condition. Even if, therefore, it could be established, as some writers have attempted to do, that all religions are ultimately founded on a primitive revelation, it would still be necessary to examine them to ascertain in what way they have affected other developments of human thought, and to see whether their deviations from the original form of that revelation throw any

light on the history of the mind itself. Nor could an anthropologist leave out of his survey any religion which he may have been taught to consider as having preserved more clearly than the rest such a primitive revelation, or as having been founded on a revelation peculiar to itself. However supernatural may have been its origin, the teachings of such a religion must be conveyed to mankind generally—unless every man has his own special divine communication—through human agency. Under this condition, there would be every probability of the religious teaching itself becoming somewhat leavened with the idiosyncrasies of the recipient mind, and the more numerous the followers of the religion and the longer it has been in existence, the more likely must it be to contain a human element, which would fairly come within the scope of anthropological inquiry.

The anthropologist has, however, another and a much stronger ground for a critical examination of religious phenomena. That man has an intimate association with nature is admitted on every hand, and by none more willingly than by those who look upon nature and man himself as owing their existence to the simple fiat of a Divine Creator. The anthropologist, recognising the truth of this association, assumes, moreover, that whatever phenomena are presented by the human mind, or connected with any of the phases of human progress, are also natural. For aught he knows, any particular phenomenon may prove not to be explicable by reference to the laws of nature, but by the very conditions of his investigation he cannot refer anything connected with man to a supernatural origin until he has found that no other explanation of it can be given. No anthropologist, however, who is wishful only to establish the truth, will bend facts so as to make them fit in with a preconceived natural hypothesis. He may, indeed, judging from other data, be so confident of the possibility of explaining all the phenomena with which anthropology has to deal, without calling in the aid of the supernatural, that he will suspend his judgment until a natural solution presents itself. If, however, any phenomenon is evidently such that it cannot be explained by the mere operation of natural forces, there is nothing in anthropology to prevent its being referred to a supernatural source; but then it immediately becomes unfitted for consideration by the students of this science. The only plane on which anthropologists, as such, can investigate is that of humanity itself.

The object of their study is "man", in his totality, not as acted on by supernatural forces, but as a part of nature, and as presenting natural phenomena.

According to this principle, religious phenomena must be treated by the anthropologist in the same way as he deals with any of the recognised products of human thought activity. The mythologies and religious notions of different peoples must be examined and compared, not only for the purposes of classification, but to ascertain the ideas on which they are founded, and the order and manner of their development. It will then be seen whether the operation of the faculties of the mind of man on the ideas derived from his own experience and reflection are sufficient to account for the phenomena under consideration. Nor must the anthropologist be deterred by the distinction usually made between *religious belief* and *superstition*, from inquiring whether they bear any relation to each other, and from examining into the nature of any such relationship. These expressions are generally used in a very indefinite sense, and there is often great difficulty, even in the minds of those who have no doubt as to the supernatural character of Christianity, in determining whether, for example, Buddhism should be classed as a religion or as a system of superstition. There is no doubt that many of the customs and ideas of this and other systems of "religious" belief are extremely superstitious, and such, in fact, appears to have been the case in relation to Mosaism itself. In considering whether the phenomena of all religions, are not equally traceable to a natural source, the anthropologist has no enmity against Christianity, nor any quarrel with the supernatural, as such. He looks upon the existence of Christianity as a phenomenon, the right understanding of which is of the utmost consequence to his science, although, from its connection with man, he considers that *prima facie* it is capable of a natural explanation. He may be mistaken in this notion, but the principles of scientific induction require that the attempt to give such an explanation should be made. If successful, there is no occasion to call in the aid of a supernatural agent; if not, the anthropologist will leave the phenomenon unaccounted for. He cannot, in this relation, treat Christianity differently from any other religion. It should be noted, however, that although the existence or operation of the supernatural cannot be taken into consideration for the deter-

mination of the religious question, yet the *belief* in that existence or operation may form a very important element in the inquiry. It is for anthropology, indeed, to show the origin of such belief, if this be possible, and whether possible or not, due weight must be given to it when tracing to their source other superstitions or beliefs. Moreover, although the student of anthropology, as such, has nothing to do with the supernatural, yet, as an individual seeker after truth, he is not thus limited. If he is satisfied that any phenomenon which he has considered from an anthropological standpoint is not explainable by the operations of natural laws or forces, anthropology does not hinder him from seeking their origin in the supernatural. The science of man is not Comtism, seeking to establish a religion of humanity on the ruins of other faiths. Nor yet is it pure Evolutionism, proclaiming an absolute existence of which nothing can be known by man, except that it is the infinite and eternal source of all relative existence. This may be true, but anthropology of itself asserts nothing as to God, the belief in the personal or absolute existence of whom concerns the individual mind alone; nor yet as to the supernatural, which, from the very idea it involves, cannot be subjected to scientific inquiry or formulisation.

I have thus summarily referred to three important classes of mental phenomena, the *social*, the *linguistic*, and the *religious*. Of these the first has relation more especially to man's intellectual faculties; the second, although probably founded in the emotional nature, is connected with the intellect as an instrument of thought; and the third, which is also founded in the emotional nature, has reference to an object outside of man, as such, altogether. There is still another class of phenomena intimately related to the religious phase of human life, though differing from it in being more especially concerned with man himself, which require consideration. These are the phenomena of *morality*, not limited to the sense in which this term has come to be applied through the importance assigned to a particular act in Christian morals, but in its proper sense as referring to the whole duty of man to man. Moral phenomena, as thus considered, may be said to have the same relation to the emotional being of man as his social customs have to the intellectual side of his nature—language being intermediate between the two, and religion, owing to its objective difference, standing apart. The study of moral phenomena is of

greater moment to the anthropologist than is usually supposed. Not that it will furnish much aid towards classification. A complete analysis of the fundamental ideas of morality current among different peoples reveals so close an agreement among them that there is little left for such a purpose. This very agreement, however, is a proof of unity of nature, and there are, moreover, certain ideas current at different epochs which may be used as tests of moral condition. Thus, while, at all times, and probably among all peoples, whatever action needlessly interferes with the rights of others, is condemned by the sense of the community as a crime, those actions which affect the performer only are at certain stages of human progress treated as innocent. In the latter category may be placed *unchastity* (of the male, at least) and *lying*, and a careful examination of the ideas entertained on these points by the peoples of antiquity, and even among present eastern peoples, will show how much they differ from those now current in most European nations. Cruelty, also, as a subjective mental phase, may be thus classed, notwithstanding its external relations. The great value of these phenomena as tests of moral progress, is evident from the fact that civil government in its earliest stages is almost entirely directed towards the protection of the rights of property, chiefly against external enemies, but indirectly also against internal intruders, so that moral ideas relating to those rights become formed in the mind almost imperceptibly. It is not so, however, with actions which do not interfere with the property of others. These only gradually come to be considered immoral, as their injurious influence on the individual actor is recognised, and as a higher standard of general morality is formed in the mind. In the development of such ideas, therefore, we have a test of the real moral progress of humanity. The inquiry into this question is, in one sense, the most important that the anthropologist has to deal with. It embraces, if it be not synonymous with, the question of the origin of what is termed "conscience." A true resolution of the phenomena of morality will, however, show that its principles cannot ultimately be distinguished from those of truth, the dictates of which, as I have elsewhere shown,* are as surely those of conscience, which is merely consciousness in a special relation, as the so-called moral intuitions themselves. In the condition

* See *Chapters on Man* (1868), p. 49.

of the general "conscience", therefore, we have the true criterion of all human progress, and in the perfect understanding of the phenomena it presents we may be said to have the real practical aim of anthropology. For, not only is the conscience—in the enlarged sense which may be applied to it as the instinctive judgment of fitness—the index of all past thought and action, and thus expressive of all the conditions, including the physical organism itself, under which thought and action have originated and operated, but it will be found to have reflected itself in the religious ideas of peoples, and thus to furnish the key to the phenomena of religious development. This is, in reality, however, nothing more than saying that the real aim of anthropology is the knowledge of man himself, not merely in relation to his physical structure, or even to his mental phenomena, but in his nature as an organised being, towards the explanation of which nature all the facts and generalisations of anthropology should be accumulated and directed.

In thus stating the aim of anthropological inquiry it may be thought that I have lost sight of the important question of the *origin* of man, certain opinions as to which have created considerable interest. It is not so, however. I have not referred to the subject earlier simply because, according to the view I have taken of the science of man, this science has no *direct* concern with the question of human origin. Of course, the *condition* of man when he first appeared on the earth is a fit question for anthropological inquiry; but when this is extended to the time *when*, or the place *where*, he originated, its strict limits appear to me to be overstepped. For, not only do the data for the determination of these questions belong to a totally distinct science, but they are such as can support no positive conclusion as to man's real antiquity or place of origin. The determination of these questions is, in fact, of little importance to anthropology considered as an independent science. That man appeared at some point of the earth's surface, at some past epoch, is proved by the fact that he now exists—unless, indeed, he has always existed on the earth, in which case, however, there can be no such questions to determine. It is for anthropology to explain the nature of man by reference to the phenomena of human life and progress, but it belongs to ontology to account, if possible, for the fact of his existence, and to geology to establish

the time and place when this existence commenced. Not that the conclusions of these sciences are of no concern to anthropology. Those of geology, especially, are, indeed, of great consequence, as from them may be discovered the physical condition of man at an early period of his history, and the further back in time geological researches take his origin the less difficulty has the anthropologist in accounting for the phenomena presented in the diversities of human types and mental characteristics. As data, therefore, for testing the conclusions of anthropology proper, the results of those researches are extremely valuable. And so it is with the speculations of ontology. From these speculations may, perhaps, be derived some data for the explanation of the problem of human existence. Anthropology by itself, however, is absolutely helpless in the determination of this problem, and it can only apply to the phenomena of human life the principles established by the science of being. It is undoubtedly true that some sort of connection between man and the animal kingdom is assumed in the fact on which anthropology is founded—the relation between man and nature. It is no less true, however, not merely that the only data at present available for the explanation of the character of this connection are on the face of them far from sufficient for the purpose; but that, whatever their value, the consideration of them does not belong to anthropology. Let the law of evolution of organic forms be once established by the application of the principles of biology, and then anthropologists may apply that law to the phenomena presented by man, to see whether it furnishes a key to the problem of his origin. Anthropology, in its strict sense, has to do with man only when he appears with the structure and faculties which constitute him man, and when the principles which govern the origin of organic life have been established, then alone can anthropology, by the application of those principles, hope to account for human origin.

Although, until these larger questions have been determined, little result can be expected from speculations as to the origin of man or as to his relations to nature in general, yet such speculations may sometimes be advisable even for the students of anthropology. They will, at least, have the effect of preventing the formation of the fallacious notion that man is a being perfectly independent of other organic existences. The discussion

of these questions will, moreover, have a beneficial effect in enlarging the mind, for it will require the consideration, not only of the geographical distribution of animals and plants, but also of the great geological changes which have undoubtedly taken place since the first appearance of man on the earth. It will require more than this; since the *absolute* origin of man can be determined, if at all, only by reference to his relation to other forms of life and to universal nature. Supposing, however, these questions to have been discussed and decided, the anthropologist must come back again to that of the *nature* of man himself. It is towards the solution of this problem all his inquiries must ultimately be directed, as, indeed, all the phenomena with which he has legitimately to deal have a direct bearing on it. But how far he will be successful in his researches will depend entirely on the spirit and manner in which he treats those phenomena. It is useless to endeavour to bend facts to support a theory, and worse than useless to try to form a real science of man unless old ideas, however much once trusted in, are cast aside so soon as they are found to be false. There is but one excuse and warrant for the plucking up and discarding of old beliefs—the regard for truth, which must be followed wherever it may lead. If the students of anthropology work in this spirit their labours will be crowned with success, otherwise these will be in vain, and the cause of truth, instead of being advanced, will be retarded.

C. S. W.

ART. II.—THE ABORIGINAL TRIBES OF THE NILGIRI HILLS.*

By Major W. ROSS KING, F.R.G.S., F.S.A.S., etc.

THE tribes which I am about to describe are doubtless not altogether unknown by report to various members of this Society, and I do not claim for myself the credit of bringing forward many new facts concerning them. My simple object is to promote attention to the subject in hopes of ultimately eliciting some more certain information than we possess as to the origin of races whose early history is shrouded in mystery and doubt.

All personal experiences, however slight, are of value as contributions to the general fund of information, and I have, there-

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fore, not hesitated to comply with the request made to me, that I would communicate such particulars concerning the hill-tribes of the Nilgiris as came under my own observation during a three years' sojourn on those hills, otherwise known as the Blue Mountains of the Deccan.

It is not necessary here to describe that well-known range further than to observe, for better understanding the situation of the tribes by whom it is inhabited, that it occupies a nearly isolated position, has a superficial extent calculated at between six and seven hundred square miles, and an extreme central altitude of 8,760 feet. Approaching them through the flat parched district of Coimbatoor, the great abruptness with which these mountains rise from the plain adds to their apparent height, and at a distance of many miles the grandeur of the lofty blue line elicits the admiration of the traveller. Arrived at the stifling village of Metapollum, at their base, and near the forest entrance of the ascent by the Coonoor Pass, gazing upwards on their hanging forests, rhododendron-sprinkled heights, and precipitous grey crags, towering almost perpendicularly to a height of 7,000 feet, one may fancy oneself enjoying a glimpse of another world. Notwithstanding the temptation which its lofty verdant summits must have offered to Europeans dwelling on the burning plains below, this range remained, chiefly on account of the then almost impenetrable belt of jungle, abounding in tigers and elephants, and surrounding its base on every side, unexplored till the year 1819, and it was not till two years later that any road was opened up to the summit.

Strange and unknown tribes were then found in possession of this favoured region, a region of green hills and sheltered hollows, of sparkling streams and tracts of primeval forest, with abundant vegetation and delightful climate. Todas and Khotas occupied the higher ranges, while Erulas and Kurumbas clustered here and there in the lower belts on the mountain sides.

These tribes I shall notice in order. Before, however, proceeding to do so, I may render my account plainer by briefly noticing another people who are located on the same ground, and in constant intercourse with the more immediate subjects of our notice, viz., the Vadacas or Badaghas, commonly called Burghers.

Though generally classed among the hill-tribes, they have, comparatively speaking, but recently come among them, having

migrated from the plains lying to the northward of the range, not much more than two hundred years ago. Their history is well known, and there is so little that is new or remarkable about them, that were it not for their intimate connection with the every-day life of the Todas and other hill-tribes, any detailed mention of them would be unnecessary. Although simply Hindoos, their original characteristics and dialect have naturally become somewhat modified in the course of the six or seven generations during which they have inhabited a locality so different to that from which they emigrated.

They are lighter in colour than the Hindoos proper, and also than any of the true hill-tribes, from whom they are besides easily distinguished at a distance on account of their wearing turbans. They are beardless, slightly built, and smooth in limb.

Several different classes exist among them, the more wealthy owning the only cows and oxen on the hills, as well as herds of buffaloes; many cultivate considerable tracts of grain and other agricultural produce; while the lowest grade either work for the others as labourers or hire themselves out to Europeans, being the only people on these hills who do so.

Their worship is that of Siva, and a separate caste among them, the Lingaits, are the priests. The Lingam is the combination of the male and female Phallic symbols of Siva and Parvati, but this religion is free from the impurities that accompany the usual forms of Hindoo Phallism, and is stern and severe. Every Vadaca village has its Lingam, which, if not actually worshipped by all, is held in universal reverence. The mass of the people appear to believe in Rangasawmie and other minor deities. These gods occupy thatched temples of sun-baked mud, and in front of each is a roughly-hewn flat stone or altar for the reception of the offerings of the devout.

I found in a solitary part of the hills near Hoolicul, half-hidden in lemon-grass nearly its own height, a temple of more interest, dedicated to Hetti. It consisted of two parts, the temple itself being a small thatched clay case like a large beehive, standing on a platform raised five or six feet from the ground. This contained, as I was told, portions of the clothing of a deceased Vadaca of wealth and of his widow, who had undergone the suttee with his corpse. Sutteeism, it may be observed, formerly prevailed among these people, even after their arrival on the

hills, though now for some generations discontinued. Opposite to, and a few paces from, this small memorial temple stood half-a-dozen spear-headed stakes placed in two rows, and connected by an ornamented transverse bar, having a seventh point, and hung with grass cords. The sketch will convey a better idea of it. These simple erections, from their perishable nature, and from the custom which they commemorate, having become obsolete, are now rarely met with on the hills.

The Vadaca funeral rites are at the present day so far modified as regards the suttee that the widow merely pretends to rush towards the blazing pile to sacrifice herself with her husband's dead body, and is pulled back by her friends, who throw her robe on the funeral pyre instead, and she herself commences a new lease of life with new clothing.

The villages of the Vadacas very much resemble those of the Hindoos of the plains, and are more numerous and of greater size than any others on the hills, frequently containing from thirty to forty houses. The number of the tribe is computed to be between eight and nine thousand, or fifteen to one, as compared with the Todas.

All the Vadacas may be considered as feudal vassals of the latter, by whose permission they remained on their first arrival, in certain appointed districts, for the occupation of which they pay tribute in grain—a certain fixed percentage on their crops. They pay great deference to the Todas, and never pass them without salaaming. Being a most industrious agricultural people, they have largely increased in wealth, and are prosperous and thriving. They are, nevertheless, besides being totally illiterate, superstitious and timid to an extraordinary degree, and to this cause may in part be attributed their continued subjection to the mere handful of men which the Todas really are.

The Todas, though by no means the most numerous, are, from an anthropological point of view, the most important and most interesting, being, doubtless, also by far the most ancient of the tribes of the Nilgiris. To them, therefore, the greater part of my observations will be devoted.

Totally distinct in aspect, mould, and bearing from any of the various races of the low country, and as markedly different from the rest of the tribes immediately around them, their exceptional and striking appearance at once arrests the eye of the most unobservant.

The men are large in frame, tall and remarkably well-proportioned, with muscular, massive, and very hairy limbs and broad chests; a physique totally opposite in every respect to that of the dwellers in the plains. Their countenances are manly, open, and handsome, the features being unusually regular. They have luxuriant black beards, and, wearing no turban or covering on the head, display to full advantage their clustering bushy hair, the European look of which is increased by their practice of wearing it parted down the centre. In colour they are nearer brown than black; their lips are full rather than large, and their cheek-bones marked but not high. The eyes are large and intelligent, and the nose is elevated and arched. It is doubtless this combination of the distinguishing features of the white race, with an almost black complexion that gives them in part their peculiar aspect. Many of them have a very Jewish expression, but the general contour of the head and cast of countenance are rather such as we are accustomed to associate with the ancient Romans. This similitude is also enhanced by their stately carriage and flowing robe, the loose folds of which give them an appearance best described by the term classic. This garment, in which the Toda envelopes himself, is of a thick coarse cotton cloth of native manufacture, white when clean, and having a red stripe or border. It is hung over the left shoulder, brought across the back and forward under the right arm, the point being flung backwards over the left shoulder again, leaving the right arm at liberty, and allowing the folds to fall gracefully about the lower part of the person down to the knees. When herding their buffaloes, the men carry a thin straight rod or wand, about six feet in length, and this is the only approach to implement or weapon that they ever use.

The women are much lighter in hue than the men, the body being of a *café-au-lait* tint, and the face a shade darker. They are as a rule very pleasing in expression, and the young women, from fifteen to twenty, generally exceedingly good-looking. They are above the middle height, large in frame and well developed, though the hands and feet are very small. Their features are regular, the mouth not large, lips often thin, and the teeth even and beautifully white; the nose is straight, whilst the eyes are dark and expressive. The most striking peculiarity about them is the arrangement of their fine glossy black hair, which is dressed in

ringlets precisely such as ladies in this country wore about twenty or five-and-twenty years ago. On the top of the head the hair is smoothed and parted with the greatest care, and the long ringlets hang on either side of the oval face with a neatness and regularity strangely at variance with their apparently rough mode of life; the hair in both sexes is anointed with ghee, as is also the skin. The female dress on ordinary occasions consists simply of a single robe similar to that of the men, though it is worn differently, being merely thrown over both shoulders and clasped in front by the hand. This, as one very soon learns, generally constitutes the sole garment of the wearer, for the Toda women have a habit, even in the presence of strangers, of throwing open the mantle to the full extent of both arms for the purpose of readjusting it on the shoulders. Some of them indeed hardly take the trouble to hold it together in front at all, and this was especially the case at a *mund*, near Coonoor, which, as I was quartered in the immediate vicinity, I had frequently to pass. I used to notice that the men watching their herds on the opposite heights, separated by a wide glen from where I was, would announce my coming by shouting across to the women at home, who were accordingly always on the *qui vive* at the roadside prepared to greet me with their usual begging cry *Enam Kurroo*, "give me a present." The way that these men carry on conversations with one another across wide intervening valleys, and apparently without effort, reminded me of the Kaffir herdsmen, every word of whose voices I have heard from hill-tops at distances that seemed incredible.

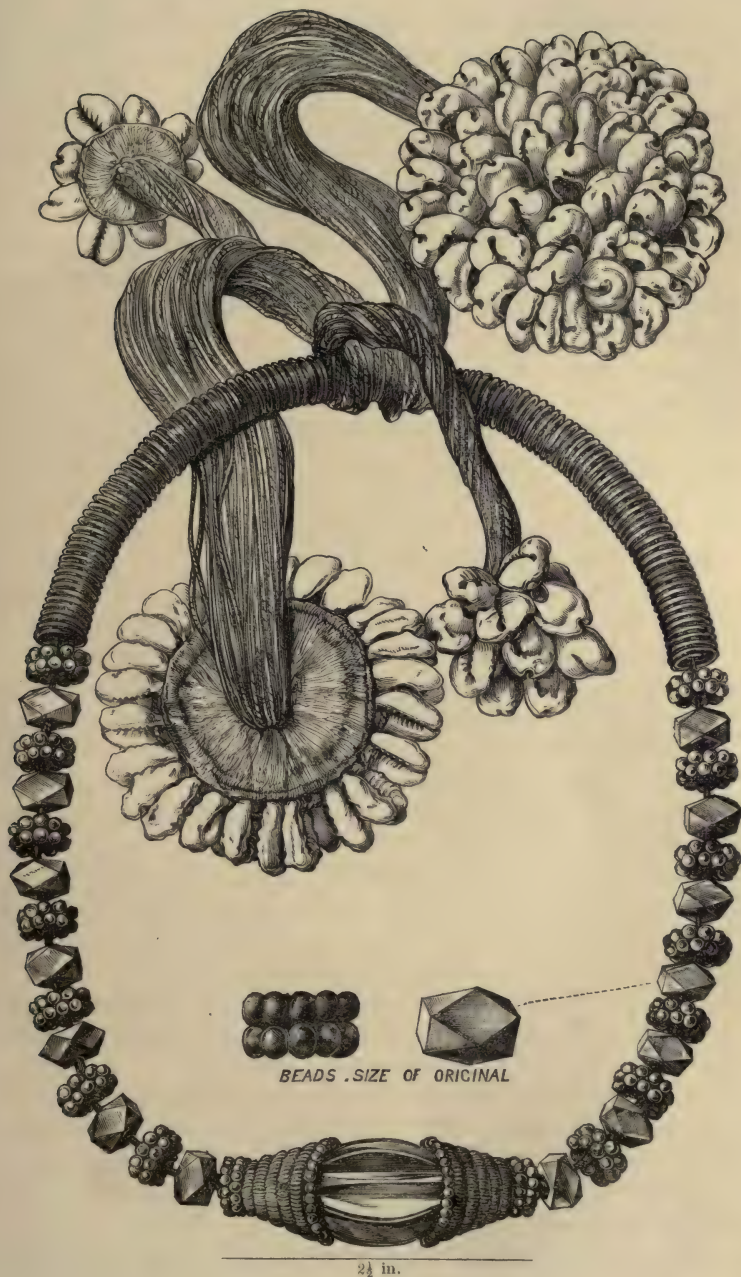
I have on occasions of ceremony seen the women with underclothing fastened round the middle in addition to the above everyday costume. I may observe that they often embroider the corners of these robes with blue thread, and shew very considerable taste in the devices.

Neither slippers nor sandals are ever seen among them, men, women, and children alike, going barefooted. The young children are generally pleasing in their appearance. I noticed that the boys up to eight or ten years old are of the same light colour as the girls, the dark hue of later life being gradually developed with each year's exposure to the sun and mountain air until the age of manhood. It is to be noted, however, of the females that, though equally exposed to climatic influences, their complexions remain nearly the same all through life.

The lineaments and characteristics of the Telingan race, as described by Pickering, seem to apply to this people in all points save one, but that a very important one, namely, the nature of the hair. According to the above author, the Telingans have "straight fine hair", but, as the hair of the Toda men is clustering, partially curled, and rather inclined to coarseness, the classification of this tribe under that head seems out of the question.

The most noticeable of the ornaments, generally valuable and always pleasing to the eye, worn by the Toda women, are their massive and very handsome necklaces of solid gold and silver, which, though of course varying in size and detail of design, are all of the same typical character, resembling some of the ancient necklaces found in our own country. These ornaments they value very highly, and regard as heirlooms not to be parted with on any consideration, so that to procure a specimen was a matter of extreme difficulty. The one now exhibited I managed after much trouble to obtain through the medium of a friendly Moravian missionary, from a female whose interest in dress and ornament was, like herself, somewhat on the wane. Mr. Metz, the missionary in question, in the course of a residence of many years among these people, had gained their trust and confidence to an almost unlimited extent; nevertheless, it required, in addition to his oral arguments, several successive handfuls of small silver coin, finally amounting to thirty-five rupees to induce her to sell it. Even this sum (which was about equivalent to £3:10:0, in shillings and sixpences) the owner consented to accept only on condition that nothing should be said to any of her tribe regarding the transaction. This ornament is the work of the Khotas, one of the tribes that will be presently described, and its weight is nearly eight ounces of the purest silver. Nearly all the adult women have similar necklaces, many of them being much larger and more massive than the present specimen, and mostly having bunches and rosettes of cowrie shells on blue cords affixed, which hang down the back of the neck.

Their other ornaments are silver ear-rings and bracelets; gold, silver, and brass rings on the fingers, a couple of very large brass armlets above the elbows, and a brass or sometimes silver belt worn round the middle, and next to the skin. The use of the latter I fancy may be the suspension of the underclothing when worn.



SILVER NECKLACE, TODA TRIBE.

The dwelling of the Toda, though in no way very remarkable, differs, nevertheless, from that of any other uncivilised people that I have met with. The walls are made of roughly planed boards joined with clay; the sides are not more than three feet high, by about twelve feet long, and the ends are gables about eight feet high, having slightly rounded points. The roof is made of reeds, and thatched with lemon-grass, a tall and very strong plant attaining a height of six to eight feet, having a strong perfume of lemon, and growing luxuriantly on the hills.

The whole structure is very substantially and neatly built, but there is no chimney, and the smoke from the fires pours out at the door and exudes from every crevice. The entrance is an opening just sufficient to admit a full-grown person on hands and knees, and is made to close from within. There is in front of the dwellings, partly enclosed by a low wall of loose stones, an open grassy space or court, which, owing to the nomadic habits of the Todas, is always of a fresh green. The huts are built close together on some naturally smooth knoll in clusters of three or four only, and not in villages; these family groups are called *munds*.

There is always one hut set apart for the reception of milk, and this is placed a little to one side of the other huts, which in construction it precisely resembles. It is entirely surrounded by a low wall, within which no females are permitted to enter on any account, nor are they allowed even to milk the buffaloes; a custom or rule which I have found existing also among the Kaffirs of South Africa.

The *munds* are situated at considerable distances apart, and their inhabitants migrate periodically from one to another for change of pasture. During the dry season—that is, from the beginning of January to the end of April—they are in the habit of setting fire to the grass, with a view to promoting its better growth; another Kaffir custom, and one, moreover, the beautiful effect of which at night will be remembered by all who have ever seen it on so large a scale.

Before leaving, the Todas close the entrances to their dwellings, but take no further care regarding them. I found several times in the course of the three years that I spent on these hills, various *munds* suddenly deserted, and again, after an interval of some two or three months, as suddenly reoccupied. As there was nothing to prevent any curious person from entering these empty huts,

I took the liberty of doing so in one or two instances, but always found them totally destitute of either utensils or furniture, and even of fixtures, beyond a raised earthen ledge along the foot of the wall, answering the purpose of a table. They were all without any light, beyond that which could find an entrance through the aperture which does duty as a door.

The total strength of the Todas at the present day is probably under eight hundred, of all ages. It is impossible to form an estimate of the original importance and numbers of such a people; but there are indications of former Toda *munds* where none now exist, so that the tribe has doubtless been more numerous at some past epoch.

— It is the boast of the Todas that they are hereditary and original lords of the soil, and owners of the whole of the Nil-giris, a claim fully allowed by the other tribes, as evidenced by their paying tribute for the land, and owning a sort of feudal vassalage. Each Toda family has its own territorial property, or district, and the Vadacas living on it are, as already stated, simply tenants, paying an annual tax, or rent in kind, for the land they live on or cultivate. We also, I believe, acknowledge their title by paying a yearly tax for our occupation. The natural peacefulness of the Toda tribe, together with their ignorance of war, make it improbable that their ancestors ever forcibly usurped the territory, and they have doubtless always been regarded by the other tribes as a superior race, entitled to it from immemorial possession and residence.

lang — Their language affords no clue to their origin, and is as strange and peculiar as themselves. It is deep-toned, harsh, and difficult of pronunciation, and without written character. It is neither spoken nor understood by the other hill-tribes with whom they are in almost daily contact, though one would have imagined that the necessity for communication for purposes of barter or exchange would, in course of time, have caused a mutual knowledge of their languages; but it is the Todas only who have acquired the means of communication, having just so much knowledge of the speech of their vassals as is demanded by the most ordinary requirements. The Toda tongue is said to comprise words of Sanskrit and Tamul origin, and to have a certain limited similarity in grammatical structure to the latter language. In all other respects, it differs widely from it or any known tongue either of the vast Indian empire, or of any other country. Recent

research has disproved the formerly accepted theory that the languages of Southern India, viz., Telinga, Carnataca, Tamul, and Malayalim, were corrupt derivatives of Sanskrit, and it is believed that the few Sanskrit words which occur in the Toda tongue have merely been engrafted on it.

With reference to the Tamul, a partial similarity, or even identity, in the vocabulary of any language might arise simply from lengthened local proximity, and is only considered by philologists as of any value when it occurs in what are supposed to be the most ancient words; namely, those which pertain to everyday life, such as no nation, even its most primitive state, could be without, and which would be the least likely to be exchanged for foreign words. As to the resemblance in grammatical construction, which is said to consist in some plurals and in the terminations of certain verbs, an oral language so difficult of pronunciation will naturally demand a great amount of careful study and an intimate acquaintance, in order to determine with certainty the value of this affinity. Moreover, supposing it to be established, it appears to be a question whether the Tamul might not owe its root to the aboriginal Toda, instead of *vice versa*.

In mental constitution the Toda is intelligent and thoughtful; although naturally indolent, capable of being roused to considerable exertion on occasions of necessity; and, notwithstanding his singularly peaceful disposition, and total want of weapons, is inherently brave and bold. It has been said that he is too lazy to hunt the wild game, large or small, which abounds on every side; but it must be remembered that he does not eat flesh. Possessing no implements of agriculture, he consequently does not till the ground, but the grain which he uses is supplied by his vassals as a *quid pro quo*, in which respect he differs little from the wealthy classes in more civilised countries. The very use of grain at all by the Todas is probably an innovation of recent date. That physical courage is not wanting in an average Toda may be inferred from the bloody funeral customs which, as will be presently described, prevail in his country. His moral fearlessness of character, with its accompanying consciousness of power, are felt and acknowledged by all the other tribes, who involuntarily bow to an influence they can neither cope with nor emulate. His contempt of danger is also exhibited in his carrying no weapon of defence against the numerous cheetahs, black panthers, bears, wild dogs, and tigers

voc - which haunt the hills, although the latter, as I can testify, frequently attack and kill his buffaloes. During my sojourn out there, parties of Todas would often come many miles distance to give us information of these occurrences, both for the sake of the *enam*, or present, they got for so doing, as well as to obtain the assistance of a rifle or two, to rid them of their enemy. The practice on these occasions is to repair to the spot where the carcase of the partly-eaten buffalo has been left, and to lie in wait till dark for the tiger, which invariably returns at night to feast on his prey. To show the activity and endurance of these men, I may mention that I have seen them at such times, after having walked ten or twelve miles in the heat of the sun, stand talking to one another till our horses were ready, and then, without any sort of refreshment or rest whatever, set out on their return with the greatest alacrity, keeping up with us the whole way.

voc - The buffaloes in question are of the kind one sees in Egypt and on the plains of India, black-skinned, ungainly animals, sparsely sprinkled with long coarse bristles, and having wide-spreading flattened horns. The herds belonging to the Todas comprise, however, very much larger and finer animals than are to be found in the low country; they are, moreover, exceedingly savage when Europeans come near them. I have frequently been charged by a whole herd when on horseback, and obliged to take to a smart canter to avoid them. Nevertheless, one may see them any day driven at will by little naked Toda urchins. Each *mund* has an enclosure or pen called a *Tooel*, in which the buffaloes are confined at night; it is generally circular in form, and consists of a low wall of loose stones surrounding a sunk area within. As these pens are never cleaned out, the interior becomes in time so much elevated, that the fence has to be heightened by the addition of thorns and cut branches. When the buffaloes come home at evening, the Todas who may be standing near invariably salute them with the greatest gravity and respect. Though they have numerous large herds of these animals, the Todas never kill them for food, keeping them solely for the sake of their milk. There are a certain number of sacred buffaloes belonging to each of their *terrarees*, or holy places, and these are never milked, but with their young by their sides, lead a privileged life, the honour being apparently hereditary. Milk is, it may be mentioned, the principal diet of these people, either in its natural state, or sour, like

that used by the natives of South Africa. All vegetable food, except the wild fruits which they gather themselves, such as yellow blackberries, wild plums, the hill-gooseberry,* or cherry, as some call it, is obtained from the Vadacas, as already explained. This consists generally of green pulse, barley, millet, and other seeds, which it is the women's duty to winnow and grind, performing the latter operation between two roughly formed circular stones, the lower one fixed, and the upper revolving on it, similar to the ancient querns of Great Britain. It is singular that, though so attached to their buffaloes, the Todas keep no other domestic animal, not even the ubiquitous dog, the companion of man in every quarter of the globe from the polar regions to the equator. I never once saw or heard of a dog in any of their *munds*. This peculiarity, by the way, was specially remarked as a distinguishing trait in the history of the people of the European Drift period; and the dislike, and even abhorrence, evinced towards that animal by the ancient Jews is well known.

I should have mentioned that the Toda tribe is divided into two classes—the sacred, and what may be called for want of a better term the lay. The latter and more numerous class are called *Khootas*, whilst the former are known as the *Terrallees*. These appear to stand in regard to the rest of the community somewhat as did the Levites of old to the children of Israel, as it is from among them alone that the priests can be elected. No marriage can by Toda law take place between these two classes, though it is now sometimes evaded, and the breach winked at. Moreover, a priest, so long as he holds that office, cannot marry, and must keep aloof from all others, excepting those who, like himself, are invested with the sacred character. In order to qualify for this, however, he has to undergo certain initiatory ceremonies and trials, such as long fasting, sleeping in the forest, naked and alone, for several nights in succession; the danger from wild beasts, and the endurance of the chill night-air of these elevated regions, being deemed sufficiently severe tests of his fitness for the office. When fully appointed, the chief priests are distinguished by a different dress from their *confrères*. The subordinate priests, or coadjutors, whose native title, like the

* *Physalis edulis*, a plant about twelve to eighteen inches high, bearing bladder-like pods, enclosing a round yellow fruit, about the size of a common gooseberry, of a very agreeable subacid flavour.

others, I cannot recal, undergo a shorter and less severe period of initiation. Both are often dairymen, an office of great honour and importance; but a *Khoota* is equally eligible, provided he goes through certain preparatory rites in order to purify himself for it. The especial duties of the priests are to tend the sacred herds just mentioned; to conduct the periodical sacrifice of a calf to invoke fruitfulness among their herds; to present the daily offering of milk at their temples; and to superintend the funeral rites. Of actual or of assembled worship, they have none, so far as I could discover, though, individually, they offer up occasional prayers to an Invisible Being for recovery or preservation from sickness.

Their temples differ but little in appearance from the ordinary huts. One of them, standing in a pretty little glen, near the road between Jakatalla and Coonoor, I made an examination of at a time when the *mund*, about half a mile off, to which it belonged was deserted by its inhabitants. Creeping in on all fours, I discovered, as well as the darkness permitted, that it contained nothing whatever but a square metal bell and a shapeless black stone, about twice the size of a man's head, the latter placed alone on the floor at the end furthest from the entrance. Being unwilling to bring this out to the light, I could not ascertain whether its colour was natural or artificial. The size precluded the notion of its being an aerolite, although it is well known that meteoric stones have been, in the early history of many countries, regarded with religious awe. To this temple, I had often previously seen the priest from the neighbouring *mund* bring, in the early morning, a vessel of new milk; but whether the offering was poured out, as some say it is, as a libation, or merely presented and taken away again, I had no means of ascertaining without the risk of giving annoyance.

It will be borne in mind that black stones have, from the earliest times, been objects of reverence or actual adoration from east to west; as, for instance, in Mecca, also among the ancient Romans, and even in the western islands of Scotland, where, moreover, milk was offered to them. Bells, too, have been, in past ages, regarded with veneration, and as having mysterious powers over demons and evil spirits, not only by various Eastern races and castes, but in ancient Britain.

The Todas believe in the existence of an invisible and

supreme Spirit, and in a future state, though this they seem to regard as one of a somewhat mundane character, inasmuch as buffaloes and abundance of milk are to be the portion of the faithful. They also pay reverence to, though they do not worship, inferior objects, such as hills and forests and the rising sun, precisely as did the ancient Celts. In connection with the adoration of light, they also make an obeisance to their evening lamps on lighting them. The observance of this custom in Europe is mentioned by Edward Spencer, who, writing in 1596, states that, "at the kindling of fire and lighting of candles, the Scots and Irish use superstitious rites."*

The presence in their temples of large stones, which have, by superficial observers, been regarded as gods, has led to the belief that these people are idolaters; but this is certainly not the case. There is no doubt that the shapeless symbols are merely representatives of an unseen power, and not in themselves actual objects of worship; though with other races, preserving less strictly their primitive character, this original use has degenerated into idolatry. The fact, therefore, that this tribe has so preserved to the present day, in the midst of a heathen country, the primary object and intention of such symbols, is one worthy of notice; and leads to the supposition that the Todas may be equally unchanged in all other respects since the earliest days of their corporate existence as a people.

It would be a most interesting point to determine satisfactorily whether or not the early progenitors of the Todas were the erectors of the numerous Druidical circles and remains found on their hills, and which crown the summit of almost every peak throughout the Nilgiri range. Several of the cromlechs have, rather against the wishes of the hill-tribes, been examined at different times, and found to contain urns of clay filled with black earth, charred fragments of human bones, and roughly made clay figures of buffaloes, and in some instances bells; the whole lying under large flat stones within the circle. It is to be noted, too, that these urns, as well as the bells, very closely resemble those that have been found in Great Britain.

Within the last few months, "a set of iron implements" has been found in a cromlech on the southern side of the Nilgiri

* *Early Races of Scotland.*

range. The description given of them is as yet so vague that it is impossible to judge of their exact character; but I believe that they resemble the bill-hook and sword or dagger form.

I found cairns and other remains in the straths running up between the higher summits—on which, as before stated, they are more usually found—as stone altars, surrounded by a ring of smaller stones, and mounds of earth enclosed by circular walls.

The circles are evidently regarded with veneration by the Todas, as well as by the Vadacas; but it is difficult to elicit information concerning them. Though the former tribe neither use sepulchral urns nor erect monuments at the present day, they invariably burn the remains of their dead within a circle of stones, and afterwards bury them there, as will be hereafter described; while the presence of the buffalo images, and the similarity in make and texture of the ancient urns to the modern pottery of their workpeople, the Khotas, seem to indicate some connection between the Todas of past days and the remains in question.

The Todas are especially remarkable for the practice of polyandry, a custom which exists among but few tribes, as, for instance, in parts of Thibet and of the Himalayas, among the Nayrs of Malabar, and one or two other races only. A Toda woman often has three or four husbands, who are all brothers, and with each of whom she cohabits a month at a time. What is more singular, such young men as, by the paucity of women among the tribe, are prevented from obtaining a share in a wife, are allowed, with the permission of the fraternal husbands, to become temporary partners with them.

Notwithstanding these singular family arrangements, the greatest harmony appears to prevail among all parties—husbands, wives, and lovers. The children live happily with their putative parents, equally well treated on every side, and as common to all alike, though, I believe, if any special reason demands it, the senior husband can claim the elder children.

The betrothal to the first husband commences at a very early age; and all subsequent brothers of the bridegroom-elect become from their birth bound to the common prospective wife. The compact, as regards the first pair, is conducted by their respective male parents; the father of the bridegroom *in esse* presenting a buffalo and a new robe to the other, the acceptance



TODA WOMAN.

of which is understood to ratify the agreement. When, in due course of time, the marriage takes place, the bride, who is probably about fifteen or sixteen years of age, receives from her father a dowry of several buffaloes, together with necklaces, armlets, and ear-rings. The ceremony is generally celebrated by a dance, which, though not of a very exciting description, seems to afford sufficient satisfaction to these cheerful, good-natured people. It consists of stamping on each foot alternately, the body being jerked half round at one step, and back again at the next, to the time of a very monotonous song.

When about to become a mother, in place of receiving every comfort and consideration, the Toda woman is sent out, or, what amounts to the same thing, is by custom expected to go out into the forest, and there remain alone, protected only in case of stormy weather by the shelter of the bushes. After the child is born, it is not allowed to be seen by any-one but its parents for some weeks, at the end of which time it is duly named and presented in public.

It is a fact worth noticing that, notwithstanding the scarcity of women (said to be owing to the practice of female infanticide which prevailed till within a very few years ago), the Todas never contract marriages with the other tribes, though living together on most friendly terms. That there never has been any mixture of the races, is sufficiently evident from the strongly marked distinctions that continue to exist between them.

It is not less singular, on the other hand, that, in spite of the system of intermarriage which has thus prevailed among the Todas for many generations, or it may be ages, there should not only be no sign of physical deterioration, but that both sexes should be so remarkable for their stature, pleasing exterior, and noble bearing. This would seem to confirm the theory that the marriage of relations, however closely connected, would, in cases of mutual faultless constitution and physical form, result in these excellences of the parents being transmitted, just as in the opposite case physical and mental defects common to both are transmitted, and even augmented.

When a death occurs among the Todas, the corpse, covered over with certain aromatic herbs, is left in the hut either till distant friends are summoned, or until the occurrence of a propitious day for the burial; these people being firm believers in

lucky and unlucky days. Each night and morning of the interval between the death and the funeral, a lament or coronach is sung over the body by the family and relatives of the deceased. In this they are often joined by passing friends, or by those who have come for the purpose of thus testifying their respect for the dead, and sympathy with the survivors—a trait in the character of this people exhibited in many other ways, and more remarkably than with even many civilised nations.

The day of a death is observed by the immediate relatives, as it was among the ancient Jews, as a solemn fast. Their necklaces and ear-rings are also taken off, and the hair is cut short, — as a sign of grief and mourning. Both sexes are obliged to conform to this custom on the death of a near male relation, — though when a female dies the men do not do so. The sacred class, or *Terralees*, are exempt in either case.

On an appointed day, the relatives from a distance having duly arrived in obedience to the summons, the body covered over with a mantle, but having the face exposed, is carried in procession on a sort of bier to the *Terraree*, or sacred ground belonging to the family, and, under the superintendence of the high priest attached thereto, assisted by his subordinate, is burned with certain solemnities and much wailing; the relatives, prior to the corpse being placed on the funeral pile, cutting off a few locks from the head.

The above are, however, only the preliminary honours paid to the dead, the principal rites being deferred to a subsequent period, which may be a few weeks, or as many months later.

With a view to the coming rites, portions of the deceased's ashes are saved from the pyre, and, together with the locks of hair, his ear-rings and other ornaments, are carefully folded in his own mantle, and laid by until the proper time arrives.

The concluding ceremonies are, perhaps, the most singular and interesting of all the Toda customs, and I was fortunate in having an unusually favourable opportunity of witnessing them. For, familiar as some of their practices have latterly become in the neighbourhood of our new Hill-stations, their funeral obsequies are only celebrated in the more remote parts of the mountains, and are consequently seldom seen by any European. Indeed, I do not know that the presence of Captain J. and myself would have been tolerated on the occasion to which I

refer, had we not been accompanied, or rather introduced, by the Moravian missionary, Mr. Metz, whom I have already mentioned as being so much esteemed by the tribe.

Our ride to Kapilla, the scene of these interesting rites, lay for some miles over a fine open undulating table-land dotted with enormous rhododendrons, which were loaded with clusters of dark crimson flowers. Gradually we got into higher ground, now pressing our hill-ponies up steep acclivities, now skirting the edge of great forest belts stretching downwards for many a mile into the sultry valleys at our feet, till, guided by the appearance of a few distant natives wending their way towards an isolated wood on one of the surrounding mist-covered peaks, we at length came within hearing of the shrill and very peculiar sound of Khotas hautboys.

Leaving our ponies, we entered a deep shadowy wood of moss-grown trees, whose gnarled and twisted stems and branches were also completely covered overhead and down to the ground with ferns, orchids, long pendent tufts of grey lichen, and parasitical plants, one with dark glossy leaves and an orange flower being especially beautiful.

In an open space, near the centre of this shady grove, and lit up by the bright rays of the midday sun, was a surging crowd of white-robed Todas, and half-naked Khotas with wild and excited looks, whose unmusical pipes drowned all other sounds. Outside the wood, on an open green space, stood a Toda temple, having its gable-ends of polished wood thickly studded over with silver coins of various sizes, fixed in perpendicular rows on each alternate plank. Near at hand was a small temporary shed, or ridge-shaped tent, made of pieces of native cloth, whilst at a little distance off was a large circular *tootel*, or cattle kraal, with a wall both higher and thicker and altogether much more substantial than usual. It was constructed of stones and sun-baked clay, the entrance being barred with stout poles.

Within this enclosure stood ten splendid buffaloes, their clean bright skins and polished horns indicating that some pains had been taken to improve their naturally fine appearance.

Crowds of women and children stood or sat about the temple, in which a party of the former had just placed the deceased's robe and ornaments, together with two bags containing his ashes. With the exception of the younger children, who were naked

the whole were clad in clean, white, soft-looking mantles, and wore ear-rings and necklaces of gold and silver. A plaintive monotonous wail was sustained while each man arriving passed before and bowed towards the dead man's ashes.

All the males, except one or two grey-headed old patriarchs who sat with great dignity a little aside, now danced together in a circle holding hands, the Khota musicians accompanying them with tom-toms and pipes.

When this was concluded half-a-dozen young men, evidently selected for their strength and activity, came forward, each carrying a long heavy club made of dark wood and pointed at the thicker end. Having thrown off the usual mantle, they stood in a kind of kilt of thick white cloth, having a red border round the lower edge, or skirt, the upper part of their bodies, as well as the legs, being bare. In this picturesque and most becoming costume they looked exceedingly handsome fellows, models as they were of muscular symmetry. At once advancing towards the cattle enclosure, with all the women and children running after them in the greatest excitement, these combatants leaped in among the buffaloes, the crowd instantly closing round and completely covering the wall, each endeavouring to get as good a view as possible of the coming spectacle.

The buffaloes were, as may be supposed, alarmed by these unusual proceedings, and their alarm became all the greater when the clubmen dancing wildly in their midst commenced striking them with their clubs. When their panic was at its height the men, watching their opportunity, sprang two together on the necks of three of the largest animals simultaneously, seizing them by the horns and nostrils and endeavouring to bear them to the ground, and affix a collar and bell round their necks. This bell is of the kind usually worn by one or more animals in every herd when grazing, and is of the ancient four-sided form, made of a single plate of metal and roughly riveted.

Marvellous was the agility displayed by these gladiators, as we may term them, in avoiding the savage thrusts of the huge sharp-pointed horns and in getting in behind them on to the animal's neck, wrestling in desperate strife as they were borne here and there among the trampling feet, now dashed against the wall, now on the ground.

To escape unhurt in such a combat was impossible, and it was

not long before we saw one of the men receive a dangerous wound in the neck from the thrust of a horn, which ripped open a wide gash from the collar-bone to the ear. He at once became an object of the greatest solicitude among the women, and was led away as a hero to the small tent, where he received every care and attention at their gentle hands.

As, one after another, fresh animals were attacked and borne to the ground with terrific struggles, those already belled and liberated turned on the common enemy, angrily tossing their formidable horns and butting so savagely that, had it not been for the extreme quickness and coolness of these men, some of them must have been killed. Their clubs now swung round and aloft with greater rapidity, and the heavy blows fell thicker and faster, the loud shouts and excited gestures of the male spectators, the exulting *Hau, hau* of the combatants, the weeping and occasional shrieks of the women, the stamping and rushing in the arena, the bellowing of the buffaloes, whose nostrils were covered with blood and foam, and the circling clouds of dust half-hiding the writhing mass, formed a whole more easily pictured in the mind than in words. A bag of the deceased's ashes was now laid at the entrance to the kraal, and the high priest, taking a handful or two of earth, threw some of it on the ashes, and some into the kraal amongst the buffaloes. One of these lay dead in the enclosure, and the rest were one by one led, or rather dragged out to their final doom, struggling violently, and plunging right and left in vain endeavours to escape from their brawny captors, who still clung to their necks. Forced up to a post fixed in the ground, at the foot of which lay the robe, ornaments, and ashes brought from the temple, the battered, bleeding animals were at length despatched there by the high priest's sacrificial axe as an offering to the dead.

Though the women had beheld with interest and excitement the torture of these unfortunate brutes, they now exhibited the greatest grief at their death, sitting and kneeling round the carcasses with clasped hands and streaming eyes, addressing them in the most affectionate terms, as "Are you happy?" "Is it well with you?"

The mourners, male and female, next drew near to each other in couples, the man putting out first the right foot and then the left towards the woman he approached, who, dropping on one

knee, touched it with her forehead. Both parties then seated themselves on the ground close to and facing each other, and bringing their foreheads together remained in that attitude, with their hands placed either on each other's knees or shoulders, the woman weeping aloud, and having her mantle drawn closely over the head. In a few minutes the man would rise, and with a plaintive ejaculation, go to another to perform again the same ceremony, invariably offering first his foot, which was always saluted with the forehead.

All this weeping and wailing, divided as it was between the buffaloes and the dead man, had a most striking effect. So unfeigned did their grief appear that I could not but feel that our presence was an intrusion. This scene continued until the mourners, who formed only a portion of those present, had all gone through the ceremony one with the other, when the priest, standing by the deceased's ashes and robe, laid on them a handful of what appeared to me, as far as I could see, to be some kind of seed or grain, and then, accompanied by the under priest, bore it back again with great reverence to the temple, the crowd falling back to permit the passage of the priests and their charge.

With this seemed to terminate the first part of the obsequies, and a sudden change came over the whole scene. The dead buffaloes were removed by noisy parties of Khotas, who had either bought them, or earned them by their services just concluded; and the crowd of Todas again assumed their every-day deportment, as they prepared for a general meal or feast.

We found that the rites would not be resumed till dark, when the robe and ornaments were to be burned; but, as we had no shelter to go to for the intervening seven hours, and no food for either ourselves or our ponies, which were, moreover, shivering from the cold of this elevated position, we were obliged to forego the gratification of witnessing the conclusion, but were shown the spot where it was to take place. This was within a circle of stones, exhibiting signs of many former burnings, and occupying a retired situation at the edge of the grove.

In the centre of this ring, on a pile of dry wood, the priests place the mantle, bags of ashes, ornaments, and wand of the deceased, together with gourds and grass-baskets of grain, for his sustenance in the other world, and the whole are ignited as the mourners stand round, the women with their heads still covered

by the mantle, and the men joining in a monotonous cry of *heh-heh*, *heh-hah*. Every vestige of the remains is on this occasion destroyed by fire, and the metal ornaments having been carefully searched for, the ashes are buried under a large flat stone in the centre of the circle. This done, the ornaments are taken home by the family with every sign of respect and affection for the lost one.

The Khotas.—Next to the Todas in point of interest, and probably also in antiquity of race, as well as of settlement on the Hills, stand the Khotas, though the two races have nothing in common either as regards physical development, countenance, usages, or dwellings.

A party of Khotas seated, as I have often seen them, in the evening, outside their dingy huts, presents an exceedingly wild and weird appearance. Thin and spare in form, and very black, the men wear only a dirty cloth round the loins, and the uncomely women the common wrapper of the country. The bare heads of both sexes are shaggy, with matted locks of dusty hair, sometimes tied in a knot behind, and invariably uncombed from the day of their birth. This is very different in nature from that of the Toda, and could it by any possibility be disentangled would be found naturally long and straight, instead of curly and clustering; the bushy beard is also absent, and every feature is of an opposite character to those of the tribe with which they are so closely in contact; the countenance being entirely destitute of that intelligent and pleasing expression so noticeable in the other.

Dirty in their dwellings and persons, they are also unclean feeders, devouring dead cattle, putrid flesh, birds of prey, or vermin, with as much apparent relish as fresh buffalo-meat, for which, unlike the Todas, they have a great predilection. I have myself seen a Khota carry home for food a dead rat thrown out of the stable a day or two previously by my *ghorawallah*. Practising such habits, it is not to be wondered at that the Todas consider them an unclean people.

On the other hand, they are a peaceful and industrious race, ingenious artisans, and indispensable to the other tribes, for whom they manufacture gold and silver ornaments, pottery, agricultural implements, wood-work, and baskets, besides acting, as already described, in the capacity of musicians at the funeral and other ceremonies of their less skilled neighbours. For these varied services they receive payment from the Todas in coin or buffaloes,

and from the Vadacas in grain and other produce. It is to be observed though, that they do not, like the latter, hire themselves out as labourers, but preserve a certain independence, entirely confining their mechanical labours to the supply of their own wants and those of these two tribes; I never saw a Khota labouring either for a European, or on the public works, which at Jakatalla gave employment to so many of the neighbouring Vadacas.

Though their pottery (made exclusively by the women) is of a coarse and inferior quality, many of their gold and silver ornaments are, as will be seen by an examination of the necklace before noticed, artistic in conception, and exceedingly well executed. Its solid beads on either side are alternate polygonal cubes, and double rings of pellets, and are evidently cast in a mould; the centre ornament is an oval of more elaborate design, and is of beaten silver. One of their chief musical instruments is the pipe, also before mentioned as being used at the Toda funerals, and of this I managed to obtain the specimen exhibited. It is a sort of hautboy, being played by means of a reed, and having a bell-mouth, which is remarkably well made out of a solid piece of hard wood. I cannot, however, say much in favour of the musical properties of this instrument, the tones of which are loud and harsh, and bear an inferior resemblance to those of the Highland bagpipes.

It is probable that the Khotas have been as long resident on the Hills as the Todas, to whom they were doubtless originally, as at the present time, inferior, both physically and in general condition. Their ability as artisans is as much the result of manual dexterity as of intelligence, in which they are by no means superior to the Todas.

As there were in the days of Adam, pastoral tribes and mechanical ("such as have cattle," as well as "artificers in brass and iron"), each following their own special occupation, so these two tribes may have held their present position with regard to one another through successive ages to the present time.

The Khota tongue is said, by those who have examined it critically, to be in its root and origin allied to that of the Todas, though, as far as mere sound goes, which is the only experience of it that I possess, they are very unlike; nor do the two tribes understand one another.

In place of the deep pectoral and sonorous tones of the Toda, who always speaks with dignity and deliberation, the Khota has a rapid utterance with a somewhat nasal twang. The similarity that really exists in the formation of some words is, however, worthy of careful notice.

Though occupied chiefly as artisans, the Khotas, like their neighbours, keep up herds of buffaloes, and, moreover, cultivate the ground to some extent, producing fair crops of grain, millet, garlic, mustard, poppy, pulse of several kinds, and what at first much surprised me, of our well-known garden flower called "prince's feather."* The mustard is not used by them as far as I could learn, but is grown as an article of exchange, or barter with the low-country people; but the poppy is largely consumed among themselves, in the form of opium. Each family has a larger or smaller patch of land, not generally close to its dwelling, but in any suitable spot on the neighbouring verdant slopes. The effect thus produced is often very beautiful: at one season sheets of scarlet poppy set in green; at another, of yellow-flowered mustard alternating with brilliant ridges of crimson amaranthus, suggest rather the idea of ornamental "ribbon border" gardens of native design than practical farming.

The prince's feather is grown for its seed, which is called *keerie*; mixed with the flour of other grain, it is much used as food in the shape of porridge. As is very generally the case among uncivilised tribes, a great proportion of the field work is performed by the women, whose, in this instance, not very pleasing form and features are by no means improved thereby. In addition to daily household duties, it is also their business to thrash out and winnow the grain, which latter operation they perform just outside their huts seated on a clean grass-mat. Raising the corn or seed in baskets to the full upward extent of the arms, they pour it out so that the wind shall carry the chaff to one side. Afterwards the grain is parched a light brown colour, and finally ground between two stones, the meal being most ordinarily used in the form of porridge. Every hut has in front a threshing-floor made of sun-baked and evenly smoothed clay, and this is a favourite place of resort in the evening.

Though, like the Todas, they have numerous buffaloes, these keep them for an entirely opposite purpose; for, whereas the others feed them solely for the sake of their milk, and never use

* *Amaranthus tristis*.

them for food, the Khotas do not milk them at all, but kill them as required, for the sake of their flesh only. It has been stated that they make no use whatever of their buffaloes, neither slaughtering them nor milking them, but this is an error. They use a good deal of the meat, more or less fresh, and are also in the habit of drying strips of it in the sun for future use, like the *biltong* of the South Africans.

The Khotas number at the present time probably about two thousand souls. One of their largest villages is that at Khotagiri, close to which I took up my abode for several weeks, on two different occasions. Though, as has been seen, the Toda *munds* never comprise more than four or five huts, the Khota villages cover some extent of ground, and the dwellings are of an entirely different character to the others, in form as well as material. These are simply rough square built cabins, with ridge roofs, thatched with grass, the walls being a mixture of clay and buffalo dung plastered over a framework of wattle and posts.

In each village are separate temples for the men and women, the larger, intended for the male sex, being dedicated to an imaginary deity, and the other to an equally mythological goddess. These temples, if they can be so called, are built similarly to the huts, except that they have the upper part of the gable-ends open, and the chief temple, which is double the size of an ordinary dwelling, is distinguished by several tall poles projecting above the ridge, and having feathers and bits of cloth attached and fluttering in the breeze. I was freely allowed to enter the large temple at Khotagiri, but found it a mere empty shed, no stones or symbols of any kind being visible. This confirmed what I had previously heard, namely, that the religion of these people does not partake of idolatry in any degree whatever, all their deities, of which there are several of both sexes, being purely ideal.

They have no separate sacred class like the Todas, though each village appears to have a family claiming an hereditary right to the priesthood, and from it a suitable man is selected to perform their simple and not very frequent religious ceremonies. He is paid and maintained by the rest for doing so, and is exempted from all manual labour so long as he continues to hold the office. The principal festival of their calendar is an annual one, lasting for several days, and held apparently for the purpose of invoking prosperity for their manufactures and tillage.

As with the Jews, the Kaffirs, and many savage races, as well as with the Celts of old, the new moon is observed as a season of festival. Once a year at this time, the different trades of the village bring to the temple an offering of their first-fruits, each presenting a specimen of his own craft, being the first article manufactured in the commencing year. After this, a feast (to which every family in the place has previously been called on by the priest to contribute) is held in the temple with many introductory forms. A general dance takes place after dark round a blazing fire to the music of pipes and tom-toms. It was a striking scene to witness these wild-looking half-naked figures gesticulating and singing round the brightly blazing pile, clapping their hands in time to the fantastic dance.

In reference to this ancient custom of dancing at particular changes of the moon, I cannot resist quoting the following extract from Strabo, given in Col. Forbes-Leslie's *Early Races of Scotland*: "The Celtiberians sacrifice to a nameless god every full moon at night, before their doors, the whole family passing the night in dancing and festival." This exactly describes the above scene, as well as many similar ones that I have witnessed among the races of South Africa.

Besides their modern temples there are some very interesting carved stones in different parts of the Hills which have apparently been erected at distant epochs. These most probably belong to this race, seeing that they are the only hill-people acquainted with the use of tools.

I accidentally discovered a very curious and perfect object of this character, and of evident antiquity, when shooting at the head of the Khotagiri Pass. In searching for a quail which had fallen into a dense bit of jungle, through which it was difficult to make a way, I came suddenly on a beautiful *kistvaen*, or perhaps *dolmen*, for it partook of the characters of each. It consisted of several large vertical slabs forming three sides of an oblong square, and having others laid horizontally on the top as a roof. It was divided by a centre slab into two cells, or compartments, the whole interior, that is to say, the inner face of each slab, being covered over with carving. The nature of these has now completely escaped my memory, and unfortunately a carefully made sketch which I took at the time was afterwards lost in the Mysore country, together with my collection of

portraits of the different hill-tribes; and of Toda songs and traditions; the latter, written in German, had been kindly presented to me by Mr. Metz, who had collected them among the natives.

Referring to these carved stones, it may not be out of place here to remind you of the eastern character of some of the symbols found on the incised monoliths in our own country; the elephant, for instance, being one frequently met with in Scotland.

The Khotas, unlike their aristocratic neighbours, who all rank equal in the social scale, are of different individual degrees of wealth, and consequent consideration. The funeral rites of the poorer are of necessity of a very simple character, the body being burned by the friends without ceremony, and the ashes forthwith buried. When a well-to-do Khota dies, the body is placed on the funeral pyre with some form, and the ashes are at the end of the year collected by the friends and carried in procession to the place of sepulture, the final honours very much resembling those in vogue among the Todas.

The Kurumbas.—About two-thirds of the way down the mountain sides, which at that height are encircled by a continuous belt of forest, we find the Kurumbas, the third of the hill-tribes, properly so-called.* They, in their turn, differ widely from both of those that have been described. Their language has a great many words belonging to, and seemingly borrowed from, the Toda, a fact doubtless due merely to their local position midway between that race and the Erulas, whose strange mixture of various low-country languages forms another portion of the Kurumba vocabulary. They have no written character, and their tongue is rather a jargon of corrupted dialects than a language.

It is not to be wondered at that strange and mysterious stories should be circulated and credited of a people whose dwelling is in the recesses of an unhealthy jungle, avoided alike by natives and Europeans, haunted by wild beasts, and all but impenetrable. Seldom visible, even at a distance, they fly from the approach of civilised man with extraordinary agility, slipping over the steepest crags like the monkeys, their companions, and instantaneously

* This tribe is of another race from the shepherd Kurumbas, described by Sir Walter Elliot as having a distinct priesthood, and worshipping the god Bhyon. The Nilgiri tribe have neither cattle nor sheep, and, in language, dress, and customs, have no affinity whatever with their namesakes.

disappearing into the forest-depths. I cannot, however, bear out the popular statements, either that "they have their dwelling in the tops of the highest trees," or are "thickly covered with hair." Their chief food is wild roots and berries, or grain soaked in water, with occasional porcupines or polecats. Their dwellings are nothing more than a few branches piled together like heaps of dead brushwood in a plantation, often simply holes or clefts among the rocks. Their clothing is, with the males, a small dirty cloth round the loins; and with the females, a rag thrown on any way that its condition and size render most available.

With no regular supply of food beyond a little patch of millet here and there in some open spot, which receives no other preparation beyond being scratched with a stick before sowing, and with only a few plantains or occasional jack-fruit, their starvation would be at times inevitable, but for certain allowances from the Vadacas in the form of grain, bestowed on them through fear of their supposed demonocracy and power of evil. For example, when any of those industrious, but most superstitious of agriculturalists, are about to commence the ploughing of their land, it is absolutely indispensable for good luck that the first furrow should be turned over by a Kurumba, otherwise the evil power at his command might be let loose to blight the expected crop. The wily savage, who, though evincing an extraordinary respect for the lordly Toda, despises the more wealthy Vadaca, is cunning enough to encourage the dread and secret dislike, in which he sees that he is held, the former owing to his strange immunity from the jungle fever and wild beasts, so dreaded by others, and the latter to his own repulsive personal appearance. He accordingly demands, as a preparatory sacrifice, a calf, or a goat, or a cock, according to the means of the occupier of the land, thus enhancing the solemnity of the ceremony to his own profit. A quantity of the native porridge being made for the occasion is also partaken of by all present. In return for the important protection supposed to be conferred by the foregoing rites, the neglect of which the Vadacas consider as certain to entail loss and disaster, and further, in order to ensure fortunate harvest weather, the magical Kurumba is again summoned when the season arrives, to reap the first handful of corn, receiving for his own use a liberal percentage on the crop. The women eke out their miserable existence by collecting gum and wild honey, for which they find a sale among the Hindoos.

The appearance of these rude people is wretched and even disagreeable. Low in stature, they are also ill-made; the complexion is of an unhealthy hue, and their heads are thinly covered with mangy-looking hair. They have bleared eyes, a rather wide mouth, and often projecting teeth. Spare to leanness, there is also a total absence of any apparent muscle, and the arms and legs are as much like black sticks as human limbs.

The tribe is widely scattered round the range, and is believed to number nearly nine hundred. Their religion resembles that of the Hindoos, so far as one can say that they have any religion at all, for they have neither priests nor temples. Their chief god is the popular Rangasawmie, but he receives no further notice than the small and easily-paid attentions of a plantain or a little grain laid before his stone image. No such ceremony as marriage exists among these people, who live together like the brute creation. Their dead are sometimes burned, sometimes buried; in either case, with as little form or trouble as possible. They are, in short, among the most debased types of mankind.

The Erulas.—The Erulas have been mentioned as inhabiting the immense tracts of forest clothing the lower ranges of the Hills, and, in fact, extend nearly to their base; so that they are less strictly hill-tribes than the others, though regarded as such by the inhabitants of the adjoining plains.

In point of numbers, they are rather superior to the last mentioned tribe, and are divided into two hereditarily distinct classes, an upper and a lower, the latter of which comprises the bulk of the people. This division is not in any way connected with their religion, but is altogether a social matter; and it is one the peculiarity of which becomes more striking when we reflect on their degraded and poverty stricken state, and on the fact that class distinctions, otherwise than for religious reasons, do not prevail among any of their neighbours.

In general appearance, the Erulas are something between the Kurumbas and the Hindoo pariah, but their hair is more abundant than that of the former, and they are altogether less wretched looking specimens of humanity, though by no means either well formed or pleasing in expression. The only appreciable difference between the upper and the lower classes is, that the former are perhaps more frequently decorated with necklaces and bracelets, made of dried berries or of millet straw, and some-

times have large rings of silver in the ears. The dress is similar to that of the Kurumbas.

Their dwellings, though but rough sheds, are a degree or two better than those of the latter; and they provide their idol, Rangasawmie, with a rude shelter from the weather. They have very few religious rites beyond the simple offering made to it, and the occasional sacrifice of a cock to propitiate evil spirits.

This custom is interesting, as having existed from the earliest ages among partially civilised races, in widely separated countries, both of the old and new world. In the East, we find it practised at the present day, as of old, among several wild tribes of India, by the Cingalese and others. Its progress westward is traceable among the Arabs; and, coming to the western limit of Europe, it is found to have existed, not only in the sun worship of the Celts, but to have been practised both in Scotland and Ireland to within a comparatively recent period.

In respect to food, these people fare no better than their half-starved neighbours, the Kurumbas. As they bestow no labour on the ground, simply sowing their grain in a careless manner on any half-cleared patch that offers itself, the produce is naturally not very great, and the little there is, is never harvested nor stored. The daily supply is cut just as required, and so long as any remains they give themselves no care for the future, but consume what they want on the spot, roughly beating out the grain, and parching it in a rude and primitive way on heated stones. At other seasons, their food consists of wild fruits, roots, and berries. In times of drought, these precarious means of subsistence frequently fail them, and many die of starvation: a fact which, nevertheless, fails to teach any lesson of prudence or industry to the survivors. In the monsoon, the tribe is scattered in all directions, each individual seeking his own subsistence without any regard to the rest, begging or stealing, according to circumstances.

The funeral rites, or rather practices, of the Erulas are most singular; but, as I have not witnessed these myself, I can only speak from the description of others. The almost universal Indian custom of cremation is not resorted to at all; but each of the two classes has its peculiar burial-place as follows. Within a hut of considerable size, placed a little apart from the village, is a large and very deep pit dug in the centre of the

earthen floor. The opening into this hole is covered over with the trunks of young trees laid close together, side by side, with a mound of earth raised over them. This is removed for the reception of each fresh corpse, which is flung in headlong like that of a dog, without any ceremony or preparation whatever.

Like the Kurumbas, they have no notion of marriage, but live promiscuously one with the other, save that the two classes keep themselves to themselves.

Both these unfortunate races have doubtless retrograded, mentally and physically, under their long continued endurance of hardship, and are, probably, in a lower and more debased condition at the present day, than ages ago, on their first arrival in the locality.

Conclusion
Origins
In conclusion, it is difficult to believe that any of the tribes I have thus endeavoured to describe (excepting, of course, the Vadacas) can be in any way allied to the inhabitants of the plains; whilst it appears almost impossible as regards the Todas, a tribe as distinct from all its various surrounding neighbours as an oasis in the desert. Superior in physique, countenance, and character, free from the inherent thirst for blood so universal among all wild races, and yet brave and courageous, by moral influence alone exercising dominion over larger tribes, exclusively pastoral, practising polyandry, speaking an unknown tongue, believing in an invisible deity,—they stand totally isolated in the very midst of an enormous population of civilised and progressing people, of an utterly different religion; and after, it may be, thousands of years, still retain unchanged their primitive character, and the observance of religious rites and customs practised in prehistoric times.

— There is no doubt that all these hill-tribes are aborigines of the peninsula of India, the whole area of which was probably once occupied by them. Some have thought it possible that they may all have been originally of one race; and others, in like manner, have argued that, even in the extreme instances of the Toda and the Kurumba, the difference in physical character may be attributed to the nature of the regions they respectively inhabit. This is allowing extraordinary power to such influences, and is, moreover, entirely contradicted by actual fact in the case of the Khotas. That tribe, occupying precisely the same regions as the Todas, is as opposite to them in physical character as is

the Kurumba. Why, unless originally different, should one tribe have short clustering hair, with bushy beards, while another in the same district has long straight locks, with little or no beard? why should the one tribe be brown, with women fair, and the other have both sexes perfectly black? and what influence of climate could convert a Kurumba's nose into a Roman one?

It is very probable that the two most degraded of these tribes—namely, the Erulas and Kurumbas—were originally one, and that the slight physical differences existing between them may have resulted from the nature of their respective situations and consequent modes of life. The Todas and Khotas, however, can never have been one people; and the characterising differences of the present day must have always been equally marked. The preservation of their respective characteristics may be due to the fact of these tribes having escaped pursuit, or even observation, at the hands of the successive subjugators of the country, owing to the lofty and inaccessible retreat which they selected for themselves in the Nilgiri mountains. The Todas might, indeed, have been located there in earlier ages,—not only previous to the irruption of the Hindoos across the Indus and through the plains of the Deccan, but anterior to the nations that preceded them, and possibly from the earliest ages. The Erulas and Kurumbas, flying thither for refuge, and finding the summit already in possession of a superior people, would naturally shelter themselves in the untenanted solitudes lower down, hiding in the dense forest of the mountain sides as at the present day. Their partial inoculation with the religion and language of neighbouring races seems also to confirm the theory of isolation in respect to the other, and further removed, tribes. In the Todas, therefore, is it not possible that we may have a remnant of one of the earliest races that inhabited Asia whose rites and customs, if not introduced into Europe by a westward migration, were doubtless analogous to those of the Celts of Britain? May they not be a living link connecting the present with ages of which we still know next to nothing, and in their singular social customs, religious rites, and even personal appearance may we not picture to ourselves, probably with a very near approach to accuracy, the scenes and people of an era coeval with, or even prior to, the stone monuments which on

their mountains, as in this land, have so long excited our interest and speculation ?

— The Todas have been, in turn, considered as outcast Jews, Roman colonists, and Celto-Scythians ; one writer asks if they could be Aryans, or might not rather be Turanians, and another propounds their affinity to the Tasmanians. I do not presume to advance an opinion on so difficult a subject as this, but have thought it interesting to point out the striking analogy that exists between their rites, customs, and monuments, and those of the Celts of Early Britain, an analogy not unknown to antiquarians. On the other hand, I have drawn attention to the many points of resemblance existing between them and the Kaffirs. The number of these I might have added to, for I have left unnoticed here some with which I was much struck at the time. I have also glanced at the few points they have in common with the Jews of old, and also with the ancient Romans, whose coins have, by the way, been found plentifully in the Deccan.

Though I do not deduce any theory of origin from the above resemblances, they are equally entitled to notice with the former, and may possibly qualify the soundness of conclusions that have been drawn from Celtic analogy.

* The real origin of the Todas and Khotas is a question which, if ever to be elucidated, we are not, as yet perhaps, sufficiently acquainted with their language satisfactorily to determine, and I would earnestly recommend the subject to this Society as one worthy of its investigation. There is, in fact, hardly any more inviting field for the anthropologist than that of Hindostan, almost every quarter of which furnishes wild tribes of whose history little is known. There were two others of these which interested me very much, namely, the Brinjarries and the Niadis.

The former are the gypsies of India, a nomadic tribe roaming the Deccan with large herds of bullocks. The lineaments of the white race are plainly visible in their sable countenances. Their dress, too, is a partial approach to that of the European, though the tall handsome women wear very singular armlets, bangles, and necklaces. One of the latter which I procured, will be found worth the inspection of those acquainted with other eastern ornaments of that nature.

The other tribe, that of the Niadis, is of a totally opposite character. They are a wretched people scattered over the low hills and waste districts of Malabar. They are nearly naked, but

are only to be seen at some little distance, generally in parties of ten or twelve, and invariably retreat on the approach of strangers. They attracted the attention of my party by howling in the most unearthly tones, from a rising ground several hundred yards from the road. Looking at them through the glass, they were seen to be miserably thin and wretched-looking creatures of the wildest possible aspect. By the advice of a Hindoo *kotwal*, I put down a few *annas* on a rock by the roadside, for which, as soon as we were at a safe distance, they raced down howling and chattering like so many wild beasts.

Cock sacrifice is practised by these people also, and no doubt many interesting customs and rites might be discovered if properly investigated; but I must not digress from my subject; my only reason for thus incidentally mentioning either of these tribes is to show what material exists for inquiry among the tribes of Southern India, whether on the hills or on the plains.

To return for a moment to the former, I may add in conclusion that the Todas and Khotas of the present day are unfortunately degenerating. Both tribes are, I think, naturally capable of considerable improvement, both mentally and morally, but, so far as I saw, and especially in the case of the former, their contact with the European has hitherto produced only its too common results, intoxication, licentiousness, and cupidity, threatening to add to the long list of so-called uncivilised races that the white man has assisted to demoralise.

ART. III.—PHYSICAL CHARACTERS OF CASIMIR THE GREAT.*

CASIMIR the Great was one of the most famous kings of Poland. He succeeded his father, Ladislas, who fought the battle of Płowce in 1331, against the warrior monks of the Teutonic order,

* *Postać Kazimiérza Wielkiego według wymiarów dokonanych przy przekładaniu szczątków jego w dniu 7ym Lipca 1869 r. oznaczona przez Prof. Dra. J. Majera. (Z 2ma Tabl. litogr.)* Krakow: 1869.

(The Physical Characters of King Casimir the Great. From Measurements taken during the Transposition of his Remains on the 7th of July, 1869. Determined by Professor Dr. Joseph Majer. With two lithographic plates. Cracow: Printed at the Jagellonic University. 1869.)

and gained a complete victory over them. The Teutonic knights had been invited one hundred years before to come from the Holy Land to repress the unbelieving Lithuanians, which they did, and had a large tract of land and many castles allotted to them. After which Ladislas found them to be the most dangerous neighbours of Poland. This led to the battle of Plowce, in which the religious knights were defeated. Ladislas died two years afterwards, in 1333, at the age of 70, and left his son Casimir to succeed him. Casimir made large concessions of territory to Bohemia and to the Teutonic order to maintain peace, rebuilt many cities, favoured foreign settlers, protected agriculture, put a stop to the oppressions the nobles practised upon the peasantry, issued the first code of laws, and incorporated the Russian principality of Halich with Poland. He died in the year 1370, and was buried in the fine Gothic Cathedral of Cracow.

On the 5th of July, 1869, an extraordinary event took place at Cracow, which moved all Poland. The restoration of the tomb of Casimir in the cathedral of Warvel was undertaken. The famous monarch had been buried five hundred years. On opening the crypt they perceived on its floor the bones of the great king, his crown, his sceptre, and other metallic objects, mingled with the dust of his coffin, of his robes, and of his body. It is unnecessary to relate the history of the pious and solemn acts which were performed on such a discovery. They collected the relics carefully in a temporary chest, and deposited them afterwards in another of metal, and replaced them in their ancient place of repose. During this double act of transposition, which was naturally accomplished in the presence of numerous assistants deputed by the clergy, by the different corporations of the country, and of the high functionaries; during the writing of the *procès-verbal*, enumerating every bone and every object of the relics of the king, Professors Kozubowski and Majer, who were charged with the transposition of these remains, succeeded in taking and noting down some measurements of the skull and of the bones of the limbs. At the same time Mr. J. Matejko made a sketch of the king's cranium.*

* It was Matejko who painted the great picture of "The Division of Poland", which was exhibited in the Exposition of 1867 at Paris, in the Austrian Saloon, where it attracted crowds of spectators. This picture was purchased by the Emperor of Austria for 100,000 francs. His more recent work, "The Union of Poland and Lithuania, 1569", is a *chef-d'œuvre*.

Such were the materials Professor Majer has used for his memoir, such the circumstances, anything but favourable to rigorous observation, to which he was obliged to submit. The work of Professor Majer has for its object to profit by these positive but imperfect observations, in order to construct an image as faithful as possible of the exterior of the great king of the Poles, supporting itself upon the anatomical knowledge of the proportions of the human body in general, as well as upon craniological data in particular. He endeavours, in the first place, to verify in this way the justness of the following words of the Polish chronicler Dlugosza :—" *Vir statura elevata, corpore crasso, fronte venerabili, crine circino et abundanti, barba promissa.*"

Professor Majer has accomplished the task he has imposed upon himself with much ability and knowledge. His learning and his great experience in handling scientific facts have helped him to arrive at conclusions the most certain and exact possible upon the questions which occupied his attention, concerning which he has derived advantage from the labours of Carus, Liharzik, as well as older authors, as Pierer, Feigel, Reinhard, etc. The result of his researches concerning the stature of Casimir the Great may be stated thus :—Length of femur, 19.5 inches ; that of tibia, 16.5 inches ; of both together, 36 inches. Length of humerus, 13 inches ; of ulna, 11 inches ; of the two combined, 24 inches.

These are Austrian measures, and the Austrian foot is 12.5 inches English, so that the Austrian inch is about a twelfth of an inch longer than the English inch.

By calculating the stature from these data, according to the ratio of Carus, the king was 6 feet 4 inches in height ; according to that of Liharzik, 6 feet 2 inches to 6 feet 3 inches. By taking the middle value of these, 6 feet 3 inches, this stature expressed in English measure would have been 6 feet 6 inches English ; so that it might well be designated *statura elevata* by the ancient chronicler. As to the expression of Dlugosza, *corpore crasso*, this has not been confirmed ; for, unless there is an error in the measurement of the clavicle, it may be concluded that Casimir was rather slender than stout. In what concerns the cranium of Casimir, Professor Majer, not being able to inspect it at leisure, does not give us any details as to its form ; and in replacing this want by the figure of the skull represented upon Plate II, after the de-

sign—which we are assured is very faithful—of Mr. Matejko, he makes only this remark: “In general, the contours of the skull of Casimir the Great present in every part curves gently arched, without offering in this respect any striking contrast. The superior maxillary being but slightly prominent, renders the facial angle relatively considerable” (page 22). The dimensions taken from the skull of Casimir afford the following measurements:—Length (E), 7·4 inches = 188 *millimètres*. Breadth (F), 6 inches = 151 *millimètres*. Cephalic index (J), ·805. Height (Carus), frontal (*a*), 5 inches = 127 *millimètres*. Parietal (*b*), 5·2 inches = 132 *millimètres*. Occipital (*c*), 4·7 inches = 118 *millimètres*. Consequently Professor Majer, following Dr. Weisbach, who erroneously places the limit between brachycephaly and dolichocephaly at the cephalic index of ·82, ranges the cranium of Casimir under the *dolichocephalic* type of Retzius. To judge from the design of Matejko it was dolichocephalic, still its index proves it to be *brachycephalic* in the sense of Von Baer, and Barnard Davis, *sub-brachycephalic* in that of Broca and Welcher.

Finally, anthropology, properly so-called, occupies only a subordinate place in the memoir of Professor Majer; nevertheless there may be found in it many data sufficiently interesting and useful. In my opinion, it is impossible not to recognise in our learned professor of Anthropology of Cracow the great merit of having collected this observation, which, without him, would have been lost, and of having added, by his excellent memoir, a new fact, although incomplete, to our craniological notions upon men illustrious in history. Our king Casimir was a superior man, a very liberal and wise legislator, a capable and energetic restorer, able in organisation, and an excellent administrator of his State, which he inherited in a ruined condition, entirely overthrown by intestinal struggles and by external invasions, that had ravaged it for two centuries.

For my part, I have two things to remark upon Casimir the Great, anthropologically considered, as the result of the work of Professor Majer. The first concerns the question of hereditability of type. The stature of Casimir was in extreme contrast with that of his father, Ladislas (the dwarf), surnamed *Cubitalis*, on account of his very small stature, which did not prevent him from being an exceedingly brave warrior, and a man of a most energetic and persistent character, which he proved in the numerous vicissitudes and misfortunes that befel him. My second re-

mark concerns the cranial type of the Slave race, which did not exist in Casimir. The last of the Piast dynasty, which was of pure Slavic origin and was very little mixed with foreign blood, Casimir had a head which I do not hesitate to regard as truly Germanic. This circumstance, if we do not hold it to be a strictly individual case, might equally serve as an argument against the hereditary transmissibility of type. Casimir was dolichocephalic, whilst he had only a very small portion of German blood in his veins. His mother and his grandmother were Polish princesses. As for his great grandmothers, for ten ascending generations, reaching to the tenth century, he had only two, the fourth and the seventh, who were German princesses; all the others were Ruthenians—*i.e.*, Russniaks, or Little Russians, and Bohemians. We might, therefore, have had every reason to expect to find in the last of the Piasts the most brachycephalic cranial type.

ISIDORE KOPERNICKI.

The learned writer of this notice of Professor Majer's curious work will, we are sure, excuse a few further words upon the craniology of the ancient Polish king, Casimir the Great. It appears from Dr. Kopernicki's recital that the king's skull was, if recovered in a perfect state, too hastily reinterred to allow of its being properly examined, measured, and delineated. This is the too common result of the superstitious feelings with which such objects are usually beheld by official, clerical, and incompetent persons. Such was the case also when Dante's cranium was discovered in 1865, by a Commission appointed by the Italian Government. The measurements made were not so complete as they ought to have been, and no photograph was taken. Hence the doubts and differences of opinion which afterwards were expressed. The examination of the remains of King Charles the Twelfth of Sweden, which was so well reported by Professor von Düben, was much more satisfactory. (Konung Carl den Tolfdes dödssätt, Stockholm, 1860.)

The restoration of the skull of Casimir in Plate II of Professor Majer's essay is apparently somewhat of a work of art from the hands of the accomplished artist Matjeko, not a precise mathematical facsimile. It is rather the production of a painter than that of an anatomist. Still in its general aspect this sketch may, without hesitation, be pronounced to resemble a Russian skull.

It has the bony conformation of a Russian skull, yet together with a finer air about some parts of the face. The frontal bone is somewhat low, giving rise to an appearance of slight depression of forehead. The extremity of the nasal bones seems too prominent, as if they had been broken across and had united again. And the anterior nasal spine is so robust and projecting, as to lead to a doubt of its correct representation,—whether it may not be exaggerated. The entire absence of the speno-temporal suture looks very like an omission. The declination of the frontal bone is more likely to be exact.

We entirely concur in Dr. Kopernicki's earlier assertion that the proportions of the skull are such that it ought to be regarded as *brachycephalic*. With regard to his opinion that it has a Germanic rather than Slavic form, it should not be forgotten that a large number of true German crania are really brachycephalic, although they are not so uniformly so and not so decidedly so as the skulls of Slavic people; so that it seems to us to be quite doubtful whether the cranium of King Casimir can be quoted with any degree of confidence against the law of hereditary transmission of forms.

ED. JOURN. ANTH.

ART. IV.—HEREDITARY GENIUS.*

THE transmission of qualities of different kinds, physical, intellectual, and moral, from parent to offspring, is, in many respects, one of the most interesting, and at the same time one of the most perplexing, topics connected with anthropology. Here, as in many other matters relating to man, the study of natural history is calculated to throw much, and important light on the subject. The hereditary descent of endowments is more apparent, but possibly not more real, more direct, or more extensive in the case of animals than it is in the case of man; and it may fairly be assumed, from all that we know on the subject, that corresponding and very similar, if not identical, influences and results prevail in each case. Breeders of certain animals have put this fact to the test, have experimented much upon it,

* *Hereditary Genius: an Inquiry into its Laws and Consequences.* By Francis Galton, F.R.S.P. London: Macmillan and Co.

and base their proceedings upon a knowledge of the principles deducible from these investigations. The entire subject is one which well deserves a careful consideration, although it requires to be followed up with caution. And not only are curious and deeply interesting phenomena observable while so engaged, but some real, practical, and extremely valuable results may be obtained from the labour thus expended.

Mr. Galton has produced a work bearing on the subject upon which we are now writing, for which he is entitled to the thanks of anthropologists generally, and indeed of all who are interested in the study of man, on account of the great pains which he has bestowed on the investigation of the question, the mass of sound and really serviceable matter that he has collected together, and the fair and candid manner in which he has discussed the various and important topics that have come under his notice. His book is, moreover, one of deep interest, and evincing a careful study of his subject. It appears to us, however, that he has taken but a limited view of the entire matter, which we hope that he may be induced to extend by a supplementary chapter in some future edition of his work. He seems, moreover, to consider what he terms genius—but by which he really means talent or ability of any kind—as descending somewhat in the way of the worldly possessions that we hold in this life, but are compelled to part with, however reluctantly, when life leaves us, from parent to child, the one transmitting it to the other in pretty much the same state and condition as that in which he himself held it. We are induced, nevertheless, to attempt what is certainly a much more comprehensive, and which we believe to be also a much more complete and correct view of the subject, by regarding talent generally as not merely directly hereditary, but as developing itself in various modes and phases during the progress of its descent, in the manner which we shall proceed to point out. Mr. Galton's book, indeed, affords some striking instances in support of this view of the case. On the whole, it appears to us that his theory is correct as far as it goes, but requires to be extended much further in order to render complete the system which he endeavours to enunciate.

The direct descent from parent to child of what may strictly be termed genius, is, we believe, very rare indeed; and even

Mr. Galton is hardly able, with his extensive and accurate researches, to adduce an instance of it. By "genius", however, Mr. Galton does not mean genius in its strict sense; but we infer that in this term he includes any kind or degree of talent above mediocrity. Talent of this sort, which enables a man to hold a respectable rank in his profession, or to rise in the world, is, we believe, just the kind of talent that is most directly hereditary, and passes from father to son very commonly. But it is with regard to the higher endowments in the way of intellectual capacity, and to the transmission of moral qualities, that the subject assumes a much greater degree of interest. It will frequently be found here that the child of a person of talent, we may say genius, is endowed with a degree of ability approaching, if not equal to, that of his progenitor; but that in its kind, and the direction of it, it is quite different, it may be directly opposite. Thus, the son of a great historian may be a poet of ability; the son of a great painter may be eminent as a lawyer; the son of an eminent naturalist may be distinguished as a scholar and an historian. It is difficult to trace out and to account for the cause of this phenomenon. Something is probably due to the mental influence on each other of the intellectual qualities possessed by both the parents, which in their descent thus undergo a change, and are consequently developed differently in the offspring.

Another peculiarity in the descent of qualities, both intellectual and moral, which may occasionally be observable in large families, is what we may term the distribution of the qualities of the parents between the different members of the family. Thus, one child will possess the energy, another the taste, another the logical capacity, possessed by one or other of his parents, while he will lack the other capacities peculiarly exhibited by them. So, as regards the moral qualities of the parents, these will occasionally be observed to be in the same manner split, as it were, and distributed singly among the different members of the family. This distribution of qualities is closely analogous to what may be observed in the breed of animals, as recorded by Professor de Quatrefages, in his valuable work on Anthropology, to which attention was called some time ago in the *Anthropological Review*,* where he remarks that, in the

* *Anthropological Review*, Nos. 26 and 28.

case of the progeny of the animals of different breeds, some of them will exhibit the breed of one parent, some that of the other. In this respect, natural history is capable of throwing much valuable light on questions of anthropology, and on none more than those respecting the descent of qualities and the mode of their transmission.

In the case of physical qualities, which are more observable, and more easy to be traced, than those which are intellectual or moral, we often find that one child resembles one of its parents in one particular characteristic, in form or in feature; another child one of its parents in another respect. This is further instanced by particular children only of the same parents inheriting a disposition to certain diseases of their parents, a well known tendency; and when both parents are tainted with the same disease—insanity, for instance—the disposition of the children to imbibe it is peculiarly strong. In such cases, it will, however, frequently be found that some of the children only exhibit this tendency, while others bear no traces of it. So, also, when both parents are extensively endowed with the same kind of peculiar talent, it will sometimes happen that one or two only of the children, out of a large family, will exhibit the same gifts, while the rest are not at all remarkable in this way.

Another phenomenon connected with the hereditary descent of qualities, but which is, in reality, the counterpart of it, is the singular contrariety, both intellectual and moral, which is sometimes exhibited between the parents and the children, and that where education has been tried to the utmost to prevent this difference. Thus, how often does it happen that the sons of a man of great genius are considerably below par in intellectual power! Frequently, too, men of great genius will be found to have sprung from parents of very common-place capacities. So, also, as regards moral qualities, pious parents have not unfrequently profligate children; and not unfrequently profligate parents may be so fortunate as to produce children who prove an honour to society. The injudicious strictness with which pious parents occasionally bring up their children may partially account for the course which they adopt, so contrary to that which they were urged to follow. And the disgrace to which profligate parents are exposed, may influence their children to shun such a course, and to adopt virtuous habits. But influences

of this kind cannot be very potent in their operation. The true philosophical way to account for this contrariety, both mental and moral, between parents and children, appears to us to be, to inquire whether there may not be certain operations analogous to, or corresponding with, those of exhaustion and repletion, action and reaction, wearing-out and revivifying, going on in the growth and development of our intellectual and moral qualities, as well as in the properties of our physical frames, which influence the transmission of these qualities, and their manifestation in the offspring. Topics of this kind supply a mine of interesting, and no less useful, inquiry to the anthropologist and the philosopher, which ages may be required to work out and to bring to a successful issue. As in our anatomical studies, the observation of animals, and natural history generally, may afford us here not only very useful hints, but serve extensively to guide us in our researches.

Another remarkable feature with regard to the transmission of qualities from parents to their children, and which has frequently been remarked in the case of physical peculiarities and tendencies to disease, is that one generation is very often passed before the manifestation appears, which is exhibited in the grandchildren instead of the children. Persons often resemble their grandfathers or their grandmothers much more than their fathers or mothers, not only in form and feature, but in particular mental and moral qualities, as also in the disposition to take particular diseases. The same principle may also prevail with regard to the descent of mental and moral endowments. We could point to numerous instances in support of this theory.

Another interesting question connected with the hereditary descent of qualities of different kinds, is the question whether the father or the mother is the parent from which those qualities, or either of them, are inherited. Possibly the intellectual faculties are mainly derived from the father, those which are physical and moral from the mother, with a certain intermixture, or, at any rate, an extensive influence as regards the qualities of each kind in each parent. The influence that each faculty of each kind, belonging to any individual, has upon the other, requires to be carefully kept in view in investigating any subject of this kind.

The precise condition of each of the parents at the time of

procreation, and this as regards physical health, mental and moral influences operating at that period, and other peculiar circumstances by which they were surrounded, require each to be taken into account during the institution of an investigation into the mode and other causes of transmission of qualities from parent to children.

Some quaint and curious remarks connected with this part of our subject, which are not altogether undeserving of Mr. Galton's attention, are to be found in a writer of the seventeenth century, Thomas Wright, on "the Passions of the Minde in generall, 1620," who tells us (p. 263), that in pursuing inquiries of this kind we ought to be careful to ascertain, among other things,—“1. If his parents were base, wicked, or infected with any notorious vice; if deformed in body, or marked by any monstrositie of nature. 2. If the manner of his begetting was unlawfull, as bastardy, and herein be divers degrees of fornication, adulterie, incest, sacrilege. 3. If he were born at such a time as the influence of the heavens had some extraordinary action in the tempering of his body, as dog daies: as at what time his father was in prison for some demerit: or in time of great plagues or diseases, or commotion in the common weale. 4. If he were borne in a bad place; as a wicked country, among vitious people: if in a city treacherously inclined, or hath been branded with any notorious vice, or persons infamous. 5. If his mother in her childing died, or was tormented in bringing him into the world, with more vehement pangues than women commonly suffer.” He further remarks that “parents naturall propensions to wickednesse, imprint for most part in their children a certain resemblance.”

In the case of legislators and statesmen, the fact of the son following the same occupation with the father, and with a certain amount of success, can hardly be allowed to be a proof of hereditary genius, as where a peerage or large estate descends from father to son, the latter is naturally led to follow the pursuit of politics, and to qualify himself to fill the duties which his position entails upon him, and his education is specially directed for this purpose. His rank and position naturally induce him to take part in public life, and he acquires at once a prominence, not from his abilities, but from his standing and fortune. Make bishoprics and judgeships hereditary, and we should soon dis-

cover that the sons of these dignitaries were frequently able to fill the offices their progenitors had held. In certain professions and trades we all know that it is very common for the father to bring up one or more of his sons to succeed him, and the plan is found to answer very successfully. The young men are educated for their future calling, and every care and inducement are exerted to render them proficient in their avocations. No one, however, would think of contending from this, that a "genius" for grocery, for farming, for physic, or even for law, is actually "hereditary".

Mr. Galton remarks, p. 196, that "it appears to be very important to success in science, that a man should have an able mother." And again, p. 329, "there is a common opinion that great men have remarkable mothers." No doubt there are numerous instances in support of this supposition; but there are a great many to the contrary, especially among those adduced by Mr. Galton, who certainly appears to regard the descent of great qualities as being generally from the father. As he rightly remarks, in the case of the mother being a person of talent, the children are, "no doubt, largely indebted to maternal influences;" and that "a child so circumstanced has the good fortune to be delivered from the ordinary, narrowing, partisan influences of home education" (p. 196). We should, however, rather have inferred that, in such case, his being largely indebted to the judicious and beneficial influences of "home education" was what served mainly to develop the talents he possessed.

The instances adduced by Mr. Galton, pp. 230, 236, of remarkable talent among the members of the families of Coleridge and Wordsworth, afford a striking proof of what we have already stated respecting men of ability having relations who, not only possess an amount of talent corresponding with their own, but, nevertheless, talent of a very different order. Thus, among the Coleridges, one is eminent as a poet and a philosopher, another as a lawyer, another as a philologist, another as an orator and a statesman, and several as scholars; very recently, too, a female member of this distinguished family has exhibited proof of decided talent, we may say "genius" here, in another line, having produced a very clever and successful work of fiction. So among the Wordsworths, one is distinguished as a poet, another as a divine, another as a lawyer. But the fact of Dibdin's father being "a considerable merchant" (p. 232), we can hardly accept as a case in point of the descent of genius.

Some instances are adduced (p. 247) of hereditary painters. They are very rare on the whole, and do not at all bear out our author's opinion of artistic talent being hereditary. Probably the most, perhaps the only, very remarkable instances are those of the Holbeins (not alluded to by Mr. Galton) and the Teniers. The case of the Landseers and the Bonheur family are referred to in the present age, and that of the Carracci's among the ancient masters (p. 251). But the remarkable fact here is, how very few sons of great painters, with all the advantages of instruction from their parents, have ever attained to any proficiency in the art.

Our author, however, not only considers artistic talent hereditary, but he ventures the opinion that "religious gifts are, on the whole, hereditary" (p. 273). His appendix, containing a list of names in support of his theory, we cannot regard as very successful as a piece of evidence. With regard to the "hereditary genius" of Archbishop Abbot, we are informed that, not only was one brother Bishop of Salisbury, but that another was Lord-Mayor of London and a Member of Parliament! With regard to Archbishop Usher, we are told that, "unluckily for the world, he married an heiress, an only daughter, who appears, like many other heiresses, to have inherited a deficiency of prolific power, for she bore him only one daughter" (p. 297). And in another part of this work (p. 131) we are informed that one frequent cause of the extinction of newly created peerages is that the person ennobled, or his son, frequently marries an heiress.

On the subject of "hereditary genius" in the families of bishops and judges, which is clearly evinced, in our author's opinion, by the number of those who obtain high position, we should strongly recommend our candid and very charitable author to consult the late Sydney Smith's letters to Archdeacon Singleton, where, to his astonishment, he will find some very grave doubts expressed as to whether in the case of the preferment of the sons and relations of bishops—and we might say the case of the offspring of judges is in point here—their promotion has been so entirely owing to "religious gifts" being "hereditary," as to a certain partiality on the part of the excellent prelates and judges who were their progenitors, who no doubt had the fullest opportunity of discerning their peculiar merits, and singularly keen eyes which enabled them to do so, combined with a strong feeling of duty to "pro-

vide for those of their own household." We do not say that we altogether blame the distinguished and conscientious personages in question, provided that they are satisfied, as we believe they generally are, of the competency of their *protégés* to fill the posts to which they are appointed. They do but follow out an established system, for which not so much they as human nature is to blame. But at all events, we do most seriously commend these facts to Mr. Galton's notice, and shall be eager to hear the result of his cogitations thereon.

Among scholars, the case of the Kennedy family (p. 302) is very properly adduced as a remarkable instance of several men of classical eminence being nearly related. We can hardly persuade ourselves, however, that the argument is much strengthened by adding that one member of the family was "Under-Sheriff of Middlesex; Acting Judge of the Sheriff's Court for forty-five years; a man of eminent capacity"; and that another was "a most successful man of business, founder of important companies" (p. 303.) Mr. Galton has told us something of hereditary divines and hereditary lawyers; we have also heard of hereditary bondsmen; but we did not expect to hear that the "genius" of an oarsman was ever suspected to be hereditary. Mr. Galton has nevertheless favoured us with a chapter on the subject, and adduces, moreover, an appendix containing a list of names in support of his opinion, which is followed by a table of wrestlers who also put in an urgent claim for "hereditary genius" in their art.

Our bachelor readers, who have already been warned to take heed and beware of heiresses, will here find some salutary and practical advice on the important and interesting subject of choosing a wife, to which we beg to direct their serious attention. "A man may be conscious of serious defects in his character, and select a wife to supplement what he wants; as a shy man may be attracted by a woman who has no other merit than that of a talker and manager; also a young awkward philosopher may accredit the first girl who cares to show an interest in him with greater intelligence than she possesses" (p. 325).

In bringing these remarks to a conclusion, we must again express our opinion of the extreme importance of the general subject before us, its suitableness for investigation by anthropologists, and the wide field that is here open for investigation and for research.

We thank Mr. Galton for leading the way. We have canvassed his opinions freely; and, frequently as we differ from him, we must again assert our belief as to the value of his efforts, and the candid manner in which he has conducted his inquiries, which we hope he will prosecute further, and with corresponding success. Vast practical results may, moreover, be obtained by following up the investigations. The philosopher, the naturalist, the biographer, the historian, may alike find occupation here, and may each be able to render something to the common store of information to be obtained. Indeed, it is difficult to say what department of literature may not be mulcted in the service of this great question. Inquiries thus instituted, based on facts, and so worked out as to produce great practical results, are peculiarly within the province of anthropology. They at once raise the science as a lofty branch of philosophical inquiry, and they render it obviously useful by the serviceable application of which they are capable. Professor De Quatrefages has shown us how much may here be accomplished. Mr. Galton has pointed to a new field, where operations promising a rich return may be carried on. It only remains for those ardent in the pursuit of this grand subject, to bring these operations to a result commensurate with their vastness and their value.

GEORGE HARRIS, F.S.A.

ART. V.—OUR DOMESTIC ANIMALS.

1.—THE HORSE.*

DURING the last three† years, three important works on the history of the domestic horse have been laid before the scientific world, and the last published, that of M. Piétrement, is not in-

* We propose, in the *Journal of Anthropology*, to give a series of articles on the history of the domesticated animals which have been at various times brought into contact with either savage or civilised man; to point out the relations which their distribution bears to that of certain human races; and to illustrate the probable history of humanity by a reference to the history of the animals which man has brought under his influence, and which have undergone modification at the hands of the human species.

† 1. *Les Origines du Cheval Domestique d'après la Paléontologie, la Zoologie, l'Histoire et la Philologie*. Par C. A. Piétrement. 8vo. Paris. Pp. 487. 1870.

2. *A. Description of the Cavern of Bruniquel*. Part ii, Equine Remains. By

ferior in interest or value to the works of Owen or Darwin. In order, however, that our readers may be able perfectly to comprehend the nature of an argument which affects the whole family of *Solipeda*, we give two original diagrams: one to show the distribution of the family in the various geological periods, and another to exhibit the present geographical habitats of the best defined species.

	MIOCENE. PLIOCENE.						
<i>Equus palæonius</i>	+						
<i>sivalensis</i>	+						
<i>namadicus</i>	+						
<i>curvidens</i>						+	
<i>neogæus</i>						+	
<i>chilensis</i>						+	
<i>conversidens</i>						+	
<i>tau</i>						+	
<i>arcidens</i>						+	
<i>asinus foss.</i>						+	
<i>fossili</i>						+	
<i>plicidens</i>						+	
<i>piscenensis</i>						+	
<i>nearcticus</i>						+	
Palæarctic. Ethiopian. Indian. Australian. Nearctic. Neotropic.							
<i>Equus caballus</i>	+
<i>asinus</i>	+
<i>onager</i>	+	+
<i>hemionus</i>	+	+
<i>equuleus</i> (?)	+
<i>quagga</i>	+
<i>Burchellii</i>	+
<i>zebra</i>	+
<i>varius</i> (?)	+
<i>hippagrus</i> (?)	+
<i>hamar</i> (?)	+
<i>antiquorum</i> (?)	+
<i>isabellinus</i> (?)
<i>fossilis</i>	+
<i>plicidens</i>	+
<i>piscenensis</i>	+
<i>palæonius</i>	+
<i>sivalensis</i>	+
<i>namadicus</i>	+

Professor Owen, F.R.S. Communicated to the Royal Society, June 9, 1864. 4to. London: 1870.—B. *Supplementary Remarks on Fossil Remains of Equines from Central and South America referable to Equus conversidens* Ow., *Equus tau* Ow., and *Equus arcidens* Ow. 4to. London: 1870.

3. *The Variations of Animals and Plants under Domestication*. By Charles Darwin, F.R.S. 8vo. London: 1868.

	Palæarctic.	Ethiopian.	Indian.	Australian.	Neartic.	Neotropic.
<i>Equus curvidens</i>	+
<i>neogæus</i>	+
<i>chilensis</i>	+
<i>conversidens</i>	+
<i>tau</i>	+
<i>arcidens</i>	+
<i>nearcticus</i>	+	...
<i>asinus fossilis</i> ...	+

We shall now proceed to give the author's argument. Since the palæontological period, the various geographical divisions of the globe were occupied, as they are at present, not merely by species, but even by races naturally distinct. The *E. caballus* itself was then represented by many savage races of feral horses. At a remote period, man had relations in Europe with various species of horses, and especially with the *Equus caballus*, which he hunted and devoured throughout the whole of the quaternary period until the end of the Stone Age. (Here, we remark, there is a *petitio principii* in the argument, as the identity of the Stone Age horse and the feral horse of the present day is supposed. However, as we shall see, this *elenchus* cuts both ways). The domesticated horse does not appear to have existed in Europe before the Bronze Age; but after this epoch it is everywhere met with. Since prehistoric times, the primitive man subjugated many of the indigenous animals of the various regions, as well of the new as of the old continent. M. Piétrement then devotes a long chapter to a historic introduction or *exposé* of the principal chronological facts of the ancient Eastern people, so far as it has been reconstructed by the labours of modern science; and considers that he has arrived at a satisfactory conclusion as to the topographical position of the first division of the Aryas. He considers that the historic documents relative to the antiquity of the utilisation of the horse by the Iranians or Aryo-Persians, Hindoos, Greeks, Assyrians, Phœnicians, Egyptians, Hebrews, Peninsular Arabs, Chinese, and by the Scythians or Turanians, prove that some of these people, who were furthest separated from Central Asia, did not originally possess horses. Zoology shows us that Central Asia has been the cradle of an important race of horses, and that the ass is originally from the south-east of Asia and the north of Africa. New discoveries in comparative philology have been adduced to confirm and to define the information given by history and by zoology, demonstrating that before historic times, the Shemites primarily

domesticated the ass, and that the Aryas conquered and utilised the horse in Central Asia. The study of the ancient Egyptian monuments proves that there were no horses whatever in Egypt at a period entirely historical. Sesostris (3433—3395 B.C.) had no horses in his army when he invaded Asia. The horse was introduced and naturalised in Egypt by the invasion and occupation of this country by the Hyksos or Shepherd Kings (2898—1945 B.C.). There existed a large number of horses in the armies which were conducted into Asia by Sêti I and his son Rameses II the Great, sovereigns whose acts have been often confounded with those of the celebrated Sesostris. The reign of Rameses the Great (sixteenth century B.C.) ought to be considered as the minimum date which one can assign to the introduction of horses in Nubia, where they have preserved their principal characters up to the present day. The present Nubian horse did not descend from one of Mohammed's mares, as the Mussulman legend pretends. The study of the books of Genesis, Exodus, Leviticus, Numbers, Deuteronomy, Joshua, and Judges, demonstrates that the Hebrews had not been accustomed to the use of the horse at the time of the high priest Heli, and that its use was contrary to the Mosaic law. The books of Samuel, Kings, and Chronicles prove that it was David who introduced, and Solomon who generalised, the use of the horse amongst the Israelites. This usage was reproached by the prophets of Israel for a long period after this epoch. Finally, the book of Job cannot be cited in support of the ancient belief in the utilisation of the horse by the Hebrew patriarchs; it nowhere precisely indicates that they employed it.

The great argument of M. Piétrement is, that all tends to prove that the Shemites nowhere domesticated the horse, not even in those countries in which the first rudiments of their civilisation are seen. If they had primarily subjugated this animal on their own account, this could only be in Mesopotamia or in Syria. All tends to lead us to the belief that the first known inhabitants of these countries employed the horse at a period antecedent to the irruption of the Shemites. Certain nations of the yellow race appear originally to have subjugated the horse at a period at least as ancient as the time of the Aryas. The author considers in detail some of the documents which denote the ancient migrations of the horse from Central Asia over the whole Asiatic continent—in the Nile Valley, in Greece, and as far as Western Europe. The

present state of knowledge relative to the first ages of the horse in African countries other than the Nile Valley are considered in detail.

So far for the analysis of M. Piétrement's work. We shall now, while coinciding generally with his conclusions, offer a few observations. M. Piétrement, with great learning and at much length, contravenes the popular opinion which identifies the words *equus* and ἵππος, with *caballus* and ἵππαριον respectively. But in spite of his most eloquent vindication of the word *caballus*, as being derived through the Celtic *capall* and *ceffyl* from the Aryan stock *Kapala*, we fail to be convinced. Passages from Horace, Juvenal, and Persius, are strained to persuade us that there was a "noble" sense to the word *caballus*; and the learned author actually goes so far as to assert that "*chez les Latins, le mot caballus était synonyme d'equus.*" We are ourselves rather led to a different conclusion. The horse which was domesticated in Britain and Gaul before the appearance of Latin civilisation was no doubt a small, wiry, fleet animal, existing in large numbers, and docile to its master. It probably had some genetic relations of descent with the *Equus fossilis* of the bone-caves, if, indeed, it was not an identical species. Its remains exist in Aquitanian and Belgian bone-caves, and its descendants still survive in Norway, in Zetland, in the Cheviots, in some of the Hebrides, on Dartmoor, Exmoor, Brittany, and the Pyrenees. The Celts termed it *capall*, but we think that no one who compares fig. 2 and fig. 6 of Plate LVII of the *Philosophical Transactions* (1870) will consider it to be of the same species as the racer, hunter, or cart-horse of the present day. The *caballus* and *equus* here differ most markedly. It is certainly a pity that our domestic horse bears such an equivocal name in the binomial taxonomy, and that the name *Equus spelæus* has been applied to the *caballus antiquorum*, or ἵππαριον. Between this and the true ἵππος, or *equus*, the distinctions are too manifest to need indication, although we would probably be inclined to admit Hamilton Smith's theory that the *Equus* in its own turn requires to be divided into two stocks at least, the bay and the dun.

The bibliography of the subject is very vast, and we are very sorry to see that M. Piétrement, whose erudition otherwise is profound, makes no mention of the work of Hamilton Smith, perhaps the most encyclopædic writer on the Equidæ. We trust

that when his valuable little volume reaches the second edition, through which it must inevitably pass, a careful study of the work may lead the author to moderate some opinions, in which, as we have above indicated, he argues not merely against the consentient voice of the masters of science, but also against the facts. Howbeit, there can be little doubt that the present work marks the advanced state of knowledge of the author, and indicates a line of argument perfectly original, and supported by a number of instances which reflect the highest credit on M. Piétrement for the erudition and lucidity displayed throughout the volume.

ART. VI.—PROFESSOR JAN VAN DER HOEVEN.*

THIS is another biographical sketch of the famous Leyden Professor, another warm tribute to his memory, but by one who was his pupil and afterwards his continued friend, who had ample opportunities to know him intimately, and, as a fellow countryman, has become well-acquainted with Van der Hoeven's writings, and has gleaned from them many incidents which bear upon their author and his history.

After the delineation of Van der Hoeven as an anthropologist, with a list of his writings relating to this science, which appeared in the *Journal* of the Anthropological Society, vol. VII, p. lxxxii, there is little that is new or particularly appropriate to this publication in this lengthened and excellent memoir, which does credit to the heart of its writer. Still, there are one or two points our readers will, we are persuaded, thank us for briefly noting.

Van der Hoeven never received any instructions in music, but he took great delight in frequenting musical performances, whereby he became an experienced hearer and a fine judge. So highly did he value the art which speaks to the heart through the ears, that he once said concerning it: "What do we know here upon earth, which works more powerfully and possesses more

* *Lebensbericht van Prof. Jan Van der Hoeven.* Door Prof. G. Ph. F. Groshans.

(Account of the Life of Prof. Jan Van der Hoeven. By Professor G. Ph. F. Groshans. Read before the Society of Netherland Literature of Leyden. Leyden: 1870. Pp. 72.)

uncontrollable force than the tones of music? What inclines more to devotional impressions, and gives us a more lively idea of a higher order of things, of God, eternity, and immortality?" (P. 6).

"He spoke Latin fluently, and wrote in that language purely, sometimes even elegantly. He read and reread the masterpieces of antiquity, which he at all times valued highly. On the 13th October, 1867, he wrote me:—'I am now reading (certainly for the third time) the *Æneid* of Virgil. I find still more pleasure in it than before. Last winter I studied the *Odyssey*.' From his writings it is apparent that he did not limit himself to the chief orators and poets, but that he was thoroughly acquainted with the philosophical writings of Cicero, was no stranger to those of Plato, and especially not to those of Aristotle."

Dr. Groshans speaks of Van der Hoeven giving a course of lectures every two years upon Anthropology, and says that the treatment was not the same in each course. Very amply were the congenital differences, especially those which manifest themselves in the skull treated. "This course on the 'Natural History of Man' was especially pleasant to him; he gave it with particular zeal and predilection. By this means the deep earnestness which was proper to him in all things showed itself still stronger than on other occasions."

Van der Hoeven died on the 10th of March, 1868. On the 12th the Burgomaster of Leyden, Dr. W. C. Van der Brandeler, on the opening of the sitting of the Council, mentioned the death of the Councillor Van der Hoeven, in whom the city had lost one of its most highly valued inhabitants, and the University had suffered a loss that could not be computed. On the 14th, at the funeral, the corpse was attended to the grave, at the Groenesteeg, by a multitude of those who honoured the deceased, of friends, and of persons interested in the mournful ceremony. The Burgomaster spoke first at the open grave, and gave a sketch of what the deceased had been in his public and in his private relations. Professor W. F. R. Suringar reminded those present of the services of Van der Hoeven in relation to the university and to science. Dr. Maronier pointed out the irretrievable loss his relations who were left behind had suffered, and the example he had given them. His son-in-law, Mr. H. W. Fangman, remembered with affection what he had been for his children, and testified the

thanks of the family to the speakers, and to all who by their presence had shown their sympathy.

It is difficult to estimate the vast importance of the dignified example of the Leyden Professor to all cultivators of anthropological science. He laid the widest foundations of his knowledge in general zoology and comparative anatomy, with which subjects he was most familiar. He subordinated all hypothesis to knowledge, and contented himself with the simple teachings of nature, avoiding the rage for speculation. In his sympathies and general feelings he embraced all mankind, coadjutors and opponents, for all he entertained and manifested the most elevated respect. And he regarded anthropology as the noblest field of human inquiry.

ART. VII.—OPENING ADDRESS TO THE ANTHROPOLOGICAL SOCIETY OF VIENNA, FEB. 13, 1870.

· BY PROFESSOR C. ROKITANSKY.*

THE invitation issued by a number of gentlemen, touching the formation of an Anthropological Society, after explaining its object, concludes with the following terms: "The proper study of man is man." A glance at the present assembly shows that those who responded to the call have well considered the object aimed at, and have well weighed and proved their forces to that effect.

Having been called upon to deliver an opening address, I think I cannot do better than offer some explanatory remarks on anthropology; which I do the more readily, believing that I am bound in some degree to justify the call made upon me. Although I feel certain that I can say nothing that is new, especially to the founders of this society, still I should like to say it, were it only to introduce myself as a sincere fellow-labourer. In surveying the field of anthropology, we find ourselves, to a great extent, unable to demarcate its boundaries; for, no sooner do we believe we detect them, than we perceive such a connection with an

* Translated from the first number of the *Mittheilungen der Anthropologischen Gesellschaft in Wien*. March 30, 1870.

adjoining field that we are obliged to renounce the task of fixing the real boundary. The vast extent of anthropological science is further indicated when we perceive its purport. Thus, when I meditate on my own or other persons' ideas and actions, tending to enlighten mankind, I practise anthropology.

Anthropology has at all times been applied, in civilised communities, both to noble and ignoble purposes; but nowhere do researches and science proceed so much hand in hand with exalted purposes as in the province of anthropology. History furnishes the proofs. Despotic rulers and their counsellors have, as well as free thinkers and philosophers, studied their countrymen at home, and foreign nations during travels, for definite purposes. Think of ancient Rome and its practical tendencies; think of Macchiavelli; think how thoroughly Austria was recently studied; but think, also, of the researches undertaken in the interest of science by Roman and Greek scholars and thinkers; think of Aristotle and Plato, and especially of those remarkable men who, in advance of their period, have endeavoured to transplant philosophy upon the soil of natural science—such men as Descartes, Malebranche, Hobbes, Hume, Locke, and that imperishable German genius, Kant. And yet, gentlemen, it is, properly speaking, only in our time that anthropology, owing to a clearer conception of its object and its connection with other sciences, has become a department of inquiry pursuing a definite purpose.

The sciences to which anthropology appeals to acquire greater depth; its starting points and the roads it pursues to become comprehensive, increase with the expansion of knowledge, with the progress of civilisation, so far as every new individual, social, or political want raises the question how it is to be satisfied in the presence of a progressive party on the one side and an obstructive one on the other, and how far their respective arguments are well grounded.

The task of anthropology is the natural history of man. The extent of the task is clear to every body. Its essential foundations are anatomy and physiology; in them every observation must take root. Everything man strives after or creates, whether they be material or psychical products, must be based upon them. It is, perhaps, natural that the method of the study of anthropology should, essentially, be comparison; comparison of

the whole material, as offered by the present and the past. And it is quite as natural that the civilised man should place himself in the centre as a standard, as comparative anatomy proceeds from and returns to him. The higher man stands in the scale, the greater for him the number of anthropological materials, since anything standing inferior to him becomes his object.

On examining the development of anthropology, we perceive that it has taken three chief directions, which pretty nearly represent the periods of its development. At first, man was almost exclusively studied in his physical and mental capacity, founded on self-observation and on the observation of his fellow citizens and countrymen. In some restricted workshops of science, so to speak, anatomical and physiological researches were made with some individual references to animals. Then peoples and states who, by travels and colonisation, were enabled to see men of other races, customs, and manners, found occasion to make ethnographic observations and to compare the different races. And, finally, in our own time, it is the primitive history of man, the desire of knowing something about our ancestors, and the question touching their origin, which occupies and excites the minds—a question justified by unanticipated finds, which render an exact inquiry possible, in a field where hitherto myths and legends exclusively dominated.

At present, these various directions are cultivated conjointly, with an apparatus of sciences whose mutual dependence is nowhere manifested in such a degree as in anthropology. Allow me, shortly, to describe the fundamental features of this apparatus. First of all, man, guided by a thorough knowledge of zoology, recognises his position in nature, and he deepens this knowledge by comparative anatomy, whose important task it is to elucidate the differences obtaining between man and the anthropoid animals. The verification of the demarcating gap in kind and degree is, by itself as well as in respect of possibly complementary finds in or on the earth, an urgent desideratum. Similar questions present themselves in the study of races and tribes. This constitutes that vast domain called by Von Baer "*Vergleichende Anthropologie*", comparative anatomy—a field to which every science and art is tributary. At first—that is to say, since the time of Buffon and Blumenbach—it was the skull which the anatomist got hold of for his compara-

tive investigations. But, however ingenious since that time the method of comparative craniology may have become, we are still in want of sufficient materials to arrive at valid results touching the size, capacity, form, and proportions of race-skulls. The most important element—namely, a comparative anatomy of the brains of races in general, and its relation to the comparative anatomy of the brains of animals, and especially of the anthropoids, is still wanting. How deplorable this gap is; how all the valuable anthropological observations which we collect remain, owing to this gap, unexplained materials, needs no detailed elucidation in an assembly the members of which are all agreed, that every thing man produces by conscious intuition, and whatever unconsciously, by hidden springs, is evolved in the form of an idea, is the work of the brain. Thus, by the side of differences in the corporeal structure, its proportions, muscular capacity, art and science in all their various forms, above all, speech, that marvellous art-work of man; further—manners and customs, religion, industry, etc., furnish materials for comparative anthropology. As, besides the verification of the differences, the indications of their connection, their original affinity, the reduction to fewer types constitute the essential problems in this field, you must allow me to touch upon some points involving the highest interest of the civilised man. If, in doing so, I enter the field of historical anthropology, I feel justified in doing so, inasmuch as the question of the origin of races involves historical researches. First, let me point at the investigations in the fields of mythology, traditions and poetry, at the affinity of the original types, indicated by the cognate accords in the ideal disposition of the branched off tribes through many generations. It always appeared to me that the last walk of *Œdipus* in the grove of the *Eumenides* was a picture transplanted to Greece from the banks of the *Indus*. Think of the light thrown on the race question by philology, of its convictive power to unite or to separate; of its claims, based on the transcendental instinctive nature of speech; for, whether it was a notion, or a visible representation which man, in his primitive state, designated by a word, this expression of his inner state was still the image of an instinctive excitement. Think of the results already obtained by the comparative study of the law institutions of different races and tribes—from the dawn of a sentiment of right to its series of develop-

ments, and its accompanying errors, and you will recognise in it unmistakeable traces of an original community. And think, finally, of what apparently seems a minor element, namely, the sense for the beautiful, for ornamentation, which, despite its differences in primitive emotions and attempts, still betrays such a striking affinity, the importance of which is forcibly expressed in the sentence—"How horrid this world would look without the sense for the beautiful."

In resuming the already mooted question touching the genesis of races, there opens before us that wide field of investigations, whether, and how far, race differences are original, or conditioned by media, such as the influences of climate, light and shade, heat, cold, vegetation, the fauna, nutrition, etc., on man. Then, how far he accommodates himself to these influences, resists them, or succumbs to them. We have then to investigate the results of the intermixture and the crossing of races, their fate when they come into contact with civilisation, the causes of the degeneration and extinction of some races, and to determine their power of resistance.

Anthropology, finally, investigates the past by its association with history, archæology, and geology, which open their pages of written history, the graves, the dwellings and asylums of ancient races who lived in prehistoric times on the sea-shore, lakes, and moors, and whose remains are found in the strata of the earth. Whilst the first, on the one hand, makes us acquainted with the inhabitants of our part of the world, up to the limits of the historical period, with their settlements, and how they were either subjugated by warlike invasions of foreigners, or transformed by the peaceable influences of civilisation; archæology and geology, on the other hand, treat of more remote periods. They infer from the prehistoric relics of man, his race; from the remains of his domestic and hunting animals, his domestic and hunting implements, his weapons, ornaments, his dwellings and graves, his mode of life, his inventive capacity, his industry, his mode of worship; and thus they furnish us with the thread of tracing the connection of that past race with the present inhabitants of that part of the world. Geology, especially, penetrates deeper into the past, according to the depth of the strata from which the finds are obtained, and we thus become acquainted with human relics belonging to an incalculably remote period,

which bear the type of a race far inferior to that of living races. As already stated at the commencement of my address, nothing of all this can be new to you; nor will there be anything new in what is to follow. If, therefore, I do not hesitate in bringing it before you, it is simply because, very singularly, there is something which concerns us very nearly.

I hold it to be very significant, that the formation of an anthropological society in Austria was only realised at this period. The interest for anthropology was in recent times excited in wider circles chiefly by the discovery of so many prehistoric remains; but I think, that the association of native talent for the promotion of anthropological knowledge in Austria, is mainly due to the emancipation of science and to freedom of expression; as such pursuits can only flourish and thrive in free countries.

Our common fatherland contains abundant anthropological materials; among these I need only mention the many-tongued races inhabiting it. They have constituted hitherto the subject of various craniological and linguistic investigations. Their characters, customs, and manners afforded descriptive materials for novels and romances; nay, their very sympathies and antipathies were in various ways turned to use; and yet we cannot say that in Austria generally, and in influential quarters particularly, the significance of these races is clearly understood; for it is a fact that Austria was lately taken somewhat by surprise at their vivacity.

If, as J. W. Jackson (*The Race Question in Ireland*, 1869) says, the time for the practical application of anthropology has not yet arrived, the cause of it, as he further explains, did not lie in anthropology, but in those who are in a position of making use of anthropological truths and its teachings. I am of opinion that our society, by the spread of anthropological knowledge in all circles, may succeed in rectifying, and even radically reforming, many practices in civil and political intercourse. But who, if not this society, are called upon to be the advocates of nature against religious and philosophical, against political and social crotchets and their pretensions; who are bound to stand in front and to enter the lists for nature and truth, for simplicity and inartificialness, if not this society? Nor will the occasions be wanting for challenges; and it is in this direction that our Anthropological Society must prove itself to be a philanthropic union.

I have drawn attention to the national materials of Austria, and must recur to them, inasmuch as their realisation may lead to important results. It is far from my intention to speak at present of the plan and method of these investigations; this much I may, however, say, that their main object must be the search after truth, and an unadorned exposition of the same. Let us bear in mind that there exists in Vienna, despite all temptations, a neutral, unprejudiced disposition to give a friendly reception to honest efforts and impartial views.

Much is yet to be done in the Austrian race question; much remains yet to be discovered and elucidated in the history, especially that of the culture of Austrian nationalities. All this must be anthropologically examined and realised.

There is, finally, another field, which I consider as specially belonging to our society; it is that of modern civilisation. It is well worth an earnest investigation. Let, therefore, the hurry of life find in this society a resting-place for deliberation; and let us henceforth, without prejudice, study both the individual and society at large.

The study of the nature of modern civilisation, of its foundations and development, the investigation of the causes of the nonconformity of its progress, the causes of local stagnations and obstructions, are thoroughly anthropological problems. They will, amongst other things, induce the society to take cognisance of some hitherto unnoticed elements of culture, and enable us to arrive at the conviction that progressive civilisation consists in a formative process arising from continuous conflicts, and so to form a scientific judgment touching their significance and capacity for development. It may result from this, as regards a civilising mission, that if civilisation—as Steffens says of a constitution—“is not to be a dress, but a life”—there will be a necessity that this civilising mission should send enlightenment in advance, and so plan it that between the latter and the subsisting state, such conflicts may arise as lead to reflection, so that civilisation may gradually, step by step, introduce itself by way of induction; by the way of becoming wise by experience. There also will be the test whether, and how far, certain states of culture have outlived themselves, so to speak, or whether they contain the germs of a special development. A deeper insight into the subject will finally lead to the conviction, that intel-

lectual culture is not always sufficient, by means of the utmost development of individual independence and freedom, to realise that assimilation and cosmopolitan conformity which is aimed at, because here and there we strike against inalienable spheres of sentiments and ideas over which knowledge has no power. Here lie hidden the foundations of the obstacles which persistently oppose the levelling tendency of civilisation, the nature and continuity of which are still misunderstood, and impart to all civilisation efforts an appearance of violence. Anthropology sees but one means which may in future times appease these struggles, which consists in breaking the path towards a productive intermixture of races.

In conclusion, I must still recur to Austria, and express the wish that Ranke's opinion on the occident may be applied to our common fatherland. The sentence runs thus:—"Upon this conflict of spiritual and political, monarchical and estate tendencies, and the reciprocal action of independent nationalities within an all-embracing, yet never closed, more ideal than representative unity, rests the peculiar life of the occident, the continuity of its civilisation, and its ascendancy in the world generally."

ART. VIII.—PROF. G. NICOLUCCI'S ANTHROPOLOGY OF ETRURIA.*

By E. VILLIN, F.R.S.L., F.A.S.L.

PROFESSOR NICOLUCCI has kept his promise about Etruria; he has revealed to us a vast field of research, has explored that field as completely as it was possible, and has given Europe the result of his labours in a paper which will be considered by all as the best authority on the subject. The memoir before us is divided into four parts, besides seven pages of plates; and treats, from beginning to end, of the anthropology of Etruria in all its aspects: geographical, historical, anatomical, in a manner as satisfactory to the anthropological student as it is creditable to the anthropo-

* Abstract of a paper read on December 4th, 1869, at the Academy of the Physical and Mathematical Sciences of Italy. (*Degli Atti della R. Accademia delle Scienze Fisiche e Matematiche*, vol. iii.)

logical savant. In our belief this is the best contribution of the year 1869 to our science.

1. *Etruria and its Ancient Populations*.—The primitive Etruscans occupied Tuscany, part of the Perugian province, and part of the existing patrimony of St. Peter. They extended their possessions into three directions, and as centres of their new acquisitions they founded Felsina (now Bologna), the port of Luni, and Volturno (now Capua). After a period of long duration, however, the Samnites put an end to the Etruscan domination in Lower Italy, destroying most of the inhabitants of Volturno; and the Celts, pouring like a torrent over the Alps, invaded New Etruria, and ended the power of the Etruscans in Upper Italy,—so that Etruria found herself reduced to her former limits, and it was there that the strength of the whole nation endured with its liberty, its laws, and its name, until it merged into Rome.

Investigations should, therefore, be carried on in the country known as Middle Etruria. And there proofs abound to show that during the stone-age that territory was inhabited, for stone utensils and weapons are being found almost everywhere. Stone weapons abound in the Upper Valley of the Tiber (which was Etruscan ground) at Ponte Molle, Tor di Quinto, and Acqua Traversa, on the right bank of the river; and, as they are always found embedded in gravel, and never in sand or clay, it is clear that the primitive seat of the most ancient populations was the slopes of the Appennines, whence these *débris* were carried into the valley.* Numerous bones of *Elephas meridionalis*, *antiquus et primigenius*, *Rhinoceros tichorhinus*, *Hippopotamus major*, *Bos primigenius*, *Cervus elaphus*, *Dama romana*, are found in the same strata. And it was during the cutting of the Arezzo and Perugia railway that Signor Cocchi† found, at a depth of forty-eight feet in the valley of Chiana, the human skull known by the name of the Olmo skull.‡ A brown flint lance point was found at the same place. This skull was described, on the one hand, by Messrs. Cocchi and Vogt, who made it brachycephalic, with an index of 86·4 or 87; whilst, on the other hand, Dr. Hamy and Dr. Broca, upon measuring a cast on the same skull, only found

* See the special works on the subjects by Ponzi, Ceselli, Bleicher, Pigorini, de Rossi, and Nicolucci.

† Cocchi, *L'Uomo Fossile nell' Italia Centrale*. Milano: 1867.

‡ "In uno strato argilloso e lacustre post-pliocenico al colle dell' Olmo, in Val di Chiana."

it 73, which would make it decidedly dolichocephalic. The latter conclusion is shared by Signor Nicolucci himself. But we are here left in the utmost uncertainty upon a capital point, so that it becomes impossible for us, who have neither seen the skull nor its cast, to definitively accept any conclusions as regards the similarity of the stone-age man with the subsequent inhabitants; and we must, with Professor Nicolucci, reserve our judgment until further investigations have cleared up the doubts about the cephalic index.

That man inhabited the same regions during the period of the polished stone weapons is abundantly proved by these implements of all kinds being found in the same regions.* But still more conclusive are the proofs of the presence of man in that country during the bronze period; and Signor Mellini, in 1854, found in a sepulchral grotto upon Monte Calamita (Elba) three skulls, with a cup and a kind of tumbler in terra-cotta, and other ornaments. Professor Vogt having described these skulls, and Signor Bechi having made an analysis of the bronze, it was recognised that the ancient inhabitants, during the bronze period at least, could in no way belong to the Phœnician or Etruscan types afterwards peopling the same country. Professor Nicolucci thinks that the Umbrians were the masters of Middle Etruria during the bronze period. The cranial indices are nearly the same in the bronze-age man as in the Umbrian skulls found at Misanello, near Bologna; they were mostly dolichocephalic:—

	MONTE CALAMITA.		MISANELLO.
Antero-posterior diameter	181 millimètres.	...	182 millimètres.
Bilateral.....	144	„	... 143
Breadth of frontal bone	97	„	... 98
Fronto-occipital curve	377	„	... 379
Cephalic index	789	„	... 786

It was during the occupation of the country by the Umbrians that the Etruscans made their first appearance in Central Italy, after some Pelasgian colonies had already settled at many points on the other side of the Appennines, and especially at Cortona. Dionysius speaks of such colonies settling on the banks of the Po seventeen generations before the Trojan war. The Po colonies joined the Pelasgians, who had advanced as far as the Tiber, and

* See Cocchi, Mortillet, the *Bulletins de la Société d'Anthropologie de Paris*, t. II, 2e serie, p. 361.

they dispossessed the native Umbrians* and Seculi, occupied a large tract of country, and settled as far as the flanks of the Apennines. But sixty years before the Trojan war the Umbri seem to have recovered their ancient dominion and dispersed the foreign invaders, and they appear to have retained possession of Etruria until the irruption of the Raseni, who conquered it entirely. And thus having eliminated—historically, and anatomically by the examination of the older skulls—all the elements which might have been taken as Etruscan, Professor Nicolucci comes to the second part of his paper: "Who were the Etruscans?"

2. *The Etruscans.*—The historians of antiquity were almost unanimous in ascribing to the Etruscans an Asiatic origin. Herodotus (*Clio*, 94) speaks of them as of a colony coming from Lydia, and his narrative, apart from what is obviously fabulous, must be the principal foundation for the belief of other historians, Tacitus included (*Annals*, lib. iv, c. 55). Some speak of this colony as coming from Lydia or from Mæonia, which is about the same thing; but Dionysius of Halicarnassus would accept no such theory, and made the Etruscans merely and simply indigenous to Central Italy, to Etruria (lib. i, 26), pointing out that they had nothing in common with the Lydians in their language, laws, religion, and customs.

The moderns, on the other hand, have been much more divided in their opinions on the point of origin; and the diversity of theories, instead of clearing the question, has added much to make the subject almost an insoluble problem. Professor Nicolucci, however, without pretending to infallibility, has come to a conclusion after comparing all the hypotheses advanced and discussed by the most serious modern critics; and we all shall most probably concur in his opinion after a consideration of his facts.

According to Schlegel† and Vermigliole,‡ the Tyrrhenians and the Pelasgians were the same people. Müller§ accepted this judgment, but tried to prove that the Pelasgians themselves were Lydians. With Lepsius¶ the Pelasgians would have simply

* See Dionysius, Strabo, Pliny, and Vannucci.

† *Die Etrusken*. Besclavia: 1827. ‡ *Annali di Eidelberga*. 1816. No. 54.

§ *Iscrizione Perugine: Discorso Preliminare*. 27, 33.

¶ *Ueber die Tyrrhenischen Pelasger in Etruria*. Lipsich: 1842-8.

come from Epirus, and their name of Tyrrhenians would have been given them in Italy from the word *τύρρῆς* (Latin *turris*), which was applied to the gigantic fortresses built by the Etruscans in Italy, as they were in Morea and Albania. In a Sardinian poem known by the name of *Canzone latina del Savio Deletone*, written between 687 and 722 A.D., a Phœnician origin is given for the first time to the Etruscans. Pruner-Bey and M. G. Lagneau* recognised this Semitic element in the aristocracy, but, at the same time, the mass of the population with them would be indigenous. Fréret,† Niebuhr,‡ Donaldson§ believed the Etruscans or Raseni, to be none else but the Reti of the Treutino. Pelloutier|| and Durandi¶ made the Etruscans Celto-Germans, for they spoke an idiom related (?) to the Armorican, Wallon, Gothic, Anglo-Saxon, and Frankish languages. These people, originally inhabiting the north of Italy, would have retired to Etruria before the invasions of the Gauls. Betham** gave them a Celto-Iberian origin, whilst Volansky†† and Gobi-neau‡‡ conjectured that the Etruscans were Slavonians. Buonarrotti made them Egyptians, an opinion sustained by Rosellini, Wilkinson,§§ and Hamilton Gray. Ellis||| maintained that the Armenians, who had spread over a large tract of Europe, and who were known, according to their different settlements, under the denomination of Frisians, Thracians, Pelasgians, had also settled in Central Italy under the name of Etruscans. This assertion is founded on an imaginary similarity between the Armenian and Etruscan languages.

After enumerating at some length each of these hypotheses Professor Nicolucci rejects them all with the exception of the first. Herodotus, Strabo, Virgil, Plutarch, Seneca, Pliny (the naturalist), Tacitus, and amongst the moderns, Lanzi, Vannucci, and Tazzadini, have, one and all, given very plausible reasons in support of the tradition which makes Lydia or Mæonia the

* *Bulletins de la Société d'Anthropologie*, t. III, 448, and t. IV, 348.

† *Hist. de l'Acad. des Inscriptions*, t. XVIII.

‡ *History of Rome*.

§ Varronianus, cap. I, 15, 17.

|| *Hist. des Celtes*. Liv. I.

¶ *Antichi Popoli d'Italia*. Turin: 1769.

** *Etruria Celtica*. Dublin: 1842.

†† *Schrift-Denkmäler der Slaven vor Christi Geburt*. 1850.

‡‡ *Inégalités des Races Humaines*. Paris: 1855. III, 57.

§§ *Topography of Thebes*. London: 1836.

||| *Armenian Origin of the Etruscans*. London: 1861.

Etruscan originary, and Professor Nicolucci comes to that conclusion himself. He acknowledges that the mass of the population was but little modified physically by the infusion of Asiatic blood; but, with regard to the customs, the civil statutes, and slightly also the language, the influence of the conquerors was undeniable and enormous. In fact, the natives of primitive Etruria (the Ligurians, Umbrians, and, perhaps, also the Latini and Sabelli upon the right bank of the Tiber) mixed with the invaders into one nation in the same manner as the Anglo-Saxons or Britons became one people with their Norman conquerors. This settlement would have taken place in the year 434 before the foundation of Rome.

The historical part of the argument being disposed of, Professor Nicolucci points out the enormous differences which existed between the Etruscans and the rest of the Italian Peninsula. Their superiority was as striking as that of the Greeks over ancient Europe. The Etruscans were equally illustrious in war, commerce, agriculture, manufacture, and in the fine arts. And, as it is in the fine arts in particular, that we are now enabled to form an estimate of their civilisation, Professor Nicolucci reminds us of the Etruscan marvels with which our museums are enriched. Their architecture and sculpture, but still more especially their terra-cotta, *ceramic*, and painted works recall to our minds the best period of art in Greece. The artistic culture which was productive of the vase-designs, and also of the freschi found in Etruscan tombs at Tarquinia, Cere, Chiusi, and Vejo, which, in point of taste, purity, simplicity, and vigour, leave nothing to be desired, is not unworthy of being compared to the attainments of the Italians; and the pictures of Vulci, in style, colour, and manner, might be put by the side of some masters' works of the fourteenth and fifteenth centuries. Art critics have detected three styles in Etruscan art, sometimes found distinct, sometimes found intermingled in the same objects:* the Asiatic, (Asia-Minor), the Corinthian, and the Athenian,—but yet, none of these in its entirety—the Etruscans gave to each a particular cast, in accordance, no doubt, with their native character.

The towns were governed by a powerful aristocracy, and they defied all attacks so long as they acted in union; but in the fourth century of the Roman era intestine struggles rendered the

* Lanci and Lenormant.

conquest of Etruria possible, and it was effected in the year 444 A.U.C. after an autonomy of exactly eight centuries. From that date the Etruscans gradually lost their name for that of Romans—the only two characteristics which they kept during the Roman domination were those of soothsayers and of artists.*

3. *Etruscan Skulls*.—The historical conclusion is, as nearly as possible, corroborated by anatomical evidence; and Professor Nicolucci, in treating of Etruscan skulls, has forgotten neither the labours of other anthropologists nor the arguments arrayed against his own views; in this respect, as in many others, his memoir is a model of fair and unbiassed induction.

Signor Garbiglietti, as early as 1841, described an Etruscan skull which he himself had found in a tomb at Vejo two years before. The authenticity of this specimen was ascertained beyond a doubt, for the tomb was anterior to the year 360 of Rome, when Camillus took Vejo, so that it could not be Roman. This skull is dolichocephalic, and gives an index of 767 millimètres.

Five more Etruscan skulls were collected from tombs at Tarquinia, Chiusi, and Cervetri, by Professor Maggiorani, and his accurate description of them demonstrated the great differences which exist between them and Roman skulls.

Retzius, founding his judgment upon a Reti skull, and believing the Etruscans and the Reti to be the same people, declared the Etruscans to have been brachycephalic. But this assertion was refuted by Baer, Charles Bonaparte, and R. Wagner, after the examination of four real Etruscan skulls. Pruner-Bey was the first who, notwithstanding the narrow limits of his personal observations, pointed out, or rather guessed, the real truth of the case, viz., that the Etruscans presented both types, but that the brachycephali were in the minority. His and Rutimäyer, in their work *Crania Helvetica*, described two more Etruscan skulls now in the museum at Göttingen, and found them dolichocephalic. And, lastly, Professor Vogt, after measuring some Etruscan skulls at the Florence Museum, sided with Retzius.

Under these circumstances it would have been impossible to determine with certainty whether the Etruscans were long or broad-headed, had not Professor Nicolucci extended his re-

* It is curious to notice that the Tuscans were the first to revive art, and succeeded best in every branch. Is not this worthy of notice in an anthropological point of view?

searches over a much larger number of skulls than had hitherto been collected, and his analysis of nineteen crania found at Perugia, Volterra, Vulci, Chiusi, Cere, Vejo, and Tarquinia (*i.e.*, all undoubtedly Etruscan), settle the vexed question emphatically. The lower maxillary is wanting in all these skulls except two; they all belonged to adults from twenty-five to sixty-five years of age, and to males, with the exception of one only. Twelve of them are dolichocephalic, so that the proportion of long skulls would be sixty-three per cent. When compared with Roman ones, the Etruscan skulls present striking differences at first sight. But the chief characteristic is that the Etruscan skulls present an aspect almost feminine in their structure—the angles and apophyses, for instance, being smoothed down and little elevated, and the bones being thin. Its weight averages 540 grammes, whilst the Roman skull weighs 650 grammes. “One rarely meets, in the Etruscan skull, with the obliteration of the sutures, and still more rarely does one find the Wormian bone, whereas in the Roman, on the contrary, the synostosis of the sutures is frequent, even in the young, and the Wormian bone is very common.” A slight prognathism occurs in the Etruscan in the dentary arch, but is confined to the parts comprised within the limits of the incisive, canine and first molar teeth—the lower maxillary being quite exempt from it.

But, in order to judge of Professor Nicolucci's conclusion for ourselves, we shall mention some of the facts which he has collected.

CHIEF CHARACTERS OF ETRUSCAN SKULLS.

1.—Dolichocephalic; with a cephalic index of 78.5 (average of 19 skulls).

2.—Brachycephaly is met with at the rate of 37 per cent.

3.—The surface presents no rugosity. Weight, without lower maxillary, 540 grammes.

4.—Obliteration of the sutures rare, and rarer still the presence of the Wormian bone.

5.—The calvaria, seen from upwards, presents an ovoidal form, more limited in its anterior than its posterior apsis; and the difference between the diameter of the former (measured from the semicircular line above the superciliary ridge) and that of the latter (measured between the parietal bosses) is as 69 to 100.

CHIEF CHARACTERS OF ROMAN SKULLS.

1.—Dolichocephalic; average of 50 skulls, 77.4.

2.—Brachycephaly met with at the rate of 30 per cent.

3.—Rugosities and roughnesses. Weight, without maxillary, 650 grammes.

4.—The obliteration of the sutures and the presence of the Wormian bone frequent.

5.—In this skull the proportion is like 76 to 100.

6.—The zygomatic arches are distinctly visible at the sides, at the anterior apsis of the calvaria, and in some they appear as salient as in Mongol skulls.

7.—A perpendicular line dividing the skull placed (without maxillary) on a horizontal plane, the preauricular line being 100, the proportion in the Etruscan skull is 87.

12.—The alveolar arch of the upper maxillary is narrow and of a parabolic form.

14.—The orbits have a nearly round form, and are notably inclined externally.

18.—The external occipital protuberance little developed, little rough, and in some skulls hardly discernable.

19.—The lower maxillary of a triangular form; both lateral branches nearly straight; the chin acute and salient; the height of the ascending branch very limited.

20.—The cubic capacity 1501 cubic centimètres; the weight of the brain 1327 grammes.

6.—The zygomatic arcade is either invisible altogether or is hardly visible at all.

7.—The proportion of this line is 107 in the Roman skull.

12.—The superior alveolar arch is large, and of a nearly circular form.

14.—The orbits are large, almost square in shape, and horizontally cut.

18.—The external occipital protuberance large, salient, and rough; the semicircular lines very elevated; and the occipital spine high and robust.

19.—The mandible large and heavy, of a decidedly parabolic form; the ascending branch high and broad.

20.—The cubic capacity 1525 cubic centimètres; the weight of the brain 1345 grammes.

The following are, amongst others, the average measurements presented by the Etruscan skulls:—

	DOLICHO. Millimètres.	BRACHY. Millimètres.	AVERAGE. Millimètres.
Horizontal circumference	531	519	528
Fronto-occipital arch	381	374	378
Frontal length	127	127	127
Parietal	132	120	129
Occipital	122	127	122
Antero-posterior diameter	186	181	184
Transverse diameter	143	149	145
Intermastoid diameter (between the tops of the mastoid epiphyses)	111	107	111
Inferior frontal diameter (above the superciliary arches)	99	98	99
Inferior frontal diameter (in the middle of the forehead, between the semicircular lines) ...	116	110	113
Cephalic index	768	822	785
Vertical index	731	737	734
Cubic capacity (in cubic centimètres)	1520	1455	1501

Professor Nicolucci discards the notion of the modification of the Etruscan type by intermarriage with the indigenous races; for the conquerors must of necessity have kept aloof from the vanquished in the same manner as is exemplified by the Turks in

Europe, the English in India, and the French in Algeria. Besides, and this has great weight, the Umbrian, the Pelasgian, the Reti, the Ligurian skulls of a genuine origin demonstrate differences from the Etruscan quite as marked and quite as distinct as those of the Roman skulls. The Phœnician skull is the only one approaching at all the Etruscan, but it is far from being similar as Pruner-Bey tried to prove it. Yet this resemblance, in which the Jews and Arabs equally participate, small as it is, strengthens the belief of Professor Nicolucci as regards the Asiatic origin of the Etruscans, since the Phœnicians were obviously of a Semitic origin; and he comes to the conclusion that the Etruscans were an already mixed race when they settled in Italy, and that their skull characteristics tend to prove them of a Lydian, or, at least, of an Asiatic stock.

4. *The Etruscans as Delineated in their Monuments.*—This portion of Professor Nicolucci's memoir is excessively interesting. The learned anthropologist is confirmed in his views by the physiognomy almost invariably presented by the bronze and marble statues, by the freschi, by the terracotta sarcophagus-covers left by the Etruscans. And after quoting the different authors, ancient or modern, who gave a description of the Etruscan type, he has little or no hesitation in speaking of the colour of their hair and eyes, and of their stature and proportions. Their hair was generally black, but sometimes of a chestnut colour. Their eyes were very dark, but sometimes, although very seldom, azure. The stature of the Etruscans was rather under the middle size; their limbs were thick and short; their head was large in proportion to their size. The general aspect of the Etruscan countenance was very fine: a round visage, with a prominent forehead, rather high in the middle, but shrunk in the lower region over the superciliary arch; a rather large nose, mostly aquiline; the cheek-bones rather projecting; a mouth moderately large; thin lips; a pointed chin; and the base of the lower jaw very oblique from the angles to the chin—a particularity accounted for by the great width of the external maxillary angle, and by the shortness of the ascending branch of the mandible: the maxillary angle in the Roman skull being from 100 to 120 deg., whereas in the Etruscan it is from 125 to 150 deg., the height of the ascending branch of the mandible between the two skulls being in the proportion of 83 to 100.

For want of space, we must end here our brief abstract of this

fine paper; but as we could hardly do it full justice in so short a notice, we advise all students of anthropology to refer to the original work. They will find most of their questions anticipated, and their curiosity satisfied on every point; for we have never read a paper treating a question more clearly, more completely, and more scientifically in all respects than this does. And what enhances still more our high esteem for the learned Professor, is the modest and sober manner in which he draws his conclusions—conclusions which he rather submits to the learned societies, than pretends to give dogmatically.

ART. IX.—ANTHROPOLOGY OF FRANCE.*

AMONG the numerous contributions to anthropology which have given to M. Paul Broca his recognised position in the very front rank of cultivators of the science, perhaps none have surpassed in importance the brilliant inaugural dissertation of the Société d'Anthropologie, in which he shewed the intimate connection, exhibited by the French recruiting returns, of variations in stature and of race.

The present memoir contains a number of interesting explanations and illustrations of the principles laid down in the former one, which are followed out under the additional light afforded by a minute study of the recruiting statistics of the one hundred and twenty-six cantons comprised in the three departments of Finistère, Côtes-du-Nord, and Morbihan; of which the first is wholly, and the second and third are partially, included within the limits of Lower Bretagne, the Bretagne *Bretonnante* (or Breton speaking) of the French.

The author begins by expressing his regret that the statistics do not enable him to form a trustworthy estimate of the average stature of men in France, since those youths who are below the regulation height (1·56 mètre, during the period of thirty years, from 1830 to 1860, which furnishes M. Broca's material), as well as those who are recognised as exempt by reason of sickness,

* *Nouvelles Recherches sur l'Anthropologie de la France en général, et la Basse Bretagne en particulier.* Par M. Paul Broca.

infirmity, or malformation, do not appear in the stature-lists at all. He points out, however, that, as the number of men of tall stature in a given district is inversely proportional to that of undersized men, as was proved by Boudin, it is probable that the variations of mean stature in the several departments of France are fairly represented by those of the numbers exempted from service for being undersized. While allowing that poverty, starvation, and the chronic diseases which result therefrom, are calculated to prevent the natural development of the body, he re-asserts that stature is, above all things, an anthropological character, and, therefore, tends to hereditary reproduction; that, in fact, "the stature of Frenchmen, considered in a general way, depends neither on altitude, nor latitude, nor poverty, nor opulence, nor on the nature of the soil, nor of the food, nor on any of the conditions of *milieu* which may have been imagined, but on one sole general influence, that of ethnic heredity.

Hereupon follows a rectification of the original position in the scale of stature of the department of the Meuse, whose exceptionally low rank in the original maps of Broca and Boudin puzzled every one who studied them. Broca, in his first memoir, somewhat confidently conjectured that there lurked some huge error in the published statistics for that department; and he has since been able to demonstrate the correctness of his conjecture, and to vindicate for the Meuse the eighteenth instead of the sixty-ninth place among the eighty-six departments of France, thus restoring it to the companionship of its neighbours in Champagne and Lorraine, supposed to be mainly peopled by the same Belgic or Kymric race.

Next comes a brief notice of the extent and causes of the elevation of stature which has occurred in France during the past half-century, which was pointed out by Boudin, and which lessened, between 1831 and 1860, the numbers exempted for "want of height" from about 9 to about 6 per cent. During the operation of this change, however, the relative position of the departments in the scale of stature has varied but little on the whole; and there has still been the same north-eastern tract of tall statures, the same great mass of short statures in the centre, south and west, and the same intermediate zone of medium statures separating the two in their whole extent, from Normandy to Dauphiny.

We have one objection to make to M. Broca's identification of the tall race with the Belgæ of Cæsar, and of the short race with his Kelts. It is not a new one; it is, that there is more reason to believe the ancient inhabitants of Burgundy and Franche Comté to have been Keltic than to have been Belgic. The objection is, however, a matter of no great consequence, as it need not invalidate M. Broca's theory of the permanence of stature as a race characteristic; for the great stature of the Germanic Burgundians, the *Septipedes Burgundiones*, is well established, and may very well be supposed to have permanently elevated that of the Kelts of the Jura, the Doubs, and the Côte d'Or.

In his second chapter, the author occupies himself with the question what denominations can most conveniently be applied to the two great races of Gaul. Amédée Thierry applied to them the names *Kymric* and *Gallic* or *Gaelic* respectively; having chosen the former, partly on the ground that the Cornish, a Kymric tongue, must have been the language of the British, and therefore also of the continental Belgæ, partly on that of the somewhat dubious identity of the Belgæ, Kimbri, and Kimmerioi. Broca thinks it most convenient, in this instance, to follow Thierry; but in the other he decidedly, and with reason, dissents from him; and considering it almost certain that the southern race, as well as the northern one, spoke a Kymric dialect, falls back on the designation of Keltic. He might have added to his reasons an argument drawn from physical characteristics, for the modern posterity of his Kelts have more outward resemblance to the Kymric Welsh than to the Gaelic Irish.

The third chapter deals with the origin of the population of Lower Brittany, and endeavours to clear up the difficulty respecting the nationality of the Armoricans, in which we are placed by the discrepancy of Strabo's statements with those of Cæsar; to whom, nevertheless, Strabo appeals as to an authority on the subject, after having assigned to Armorica the name of *Belgica parocœanica*.

"Après cela," says Broca, "on ne conçoit pas qu'il ait pu dire: 'Le divin César, dans ses Commentaires, suit encore cette division.' Au lieu de diviniser César, il aurait mieux fait de le lire avec plus de soin, et il aurait vu, dans le premier alinéa du premier livre de la Guerre des Gaules, que la limite des peuples belges ne descendait pas au-dessous de la Seine."

Among other arguments by which he supports this statement of Cæsar, our author adduces the great resemblance between the Bretons and the non-Belgic people of central France, with respect to the degree of prevalence of certain infirmities among the conscripts, such as myopia, varicose veins, varicocele, dental caries, and the like. They resemble each other also, we are told, in being generally of short stature and dark-haired; but there are certain cantons of Brittany where a tall and comparatively fair race predominates, whom Broca supposes to be the descendants of immigrants from Britain. After describing the variations of opinion respecting the date, extent, and character of this British immigration, he proceeds to argue that there must have existed in Armorica in the fifth century a native population more numerous than the immigrant Bretons, and that these latter must have come in a peaceable way, and combined with the indigenes against the Germanic invaders of the period. He thinks Eastern Brittany had already abandoned the Armorican speech and adopted a Romanesque one before the Frank invasion; and whereas, having been first Latinised, this region was afterwards Germanised to some extent by the Franks, Saxons, and Normans, while the only important influence exercised on Western Brittany was that of the Kymric British; he regards the former as ethnologically resembling France in general, while the latter may represent to us the condition of Gaul before the Roman conquest.

Returning to the question whether the original Armoricans were Belgic or Keltic, he points out that if they were the former, the Britons having also been Belgic, we ought to find only one race in Lower Brittany; whereas, like William Edwards, he finds two races there; and, going beyond Edwards, ascertains that they are still locally divided, and do not even yet constitute a homogeneous race. Having constructed a map of Lower Brittany, or rather of the three departments of Finistère, Côtes-du-Nord, and Morbihan, within which Lower Brittany is included, he has divided the hundred and twenty-six cantons into three classes, distinguished by tints. Those which yield least exemptions on account of defective stature are coloured white; those which yield most exemptions, or which produce the shortest men, are black, and forty-two intermediate in this respect are grey. The results are very striking to the eye. With four exceptions, all the black cantons form a single mass, stretching from north to south across

the centre of the country. Not a single black canton lies wholly outside the boundary of the Breyzad or Breton language, and out of forty-eight maritime cantons only six are black, or one-eighth; while of seventy-eight inland cantons, thirty-six, or nearly one-half, are of that colour. The two insular cantons, Ushant and Belle Isle, rank very high in the scale.

M. Broca is of opinion that nothing but racial heredity can explain this distribution of tall and short statures, Lower Brittany being, with respect to all the conditions of *milieu*, as the French term them, remarkably homogeneous. He does not think the neighbourhood of the sea can in itself have any influence, seeing that the maritime cantons differ so much from each other in the scale of stature. But the facts can be well explained by the supposition that a population of small stature anciently occupied the whole of Lower Brittany, and that another population of taller stature came by sea, at various times and peaceably, to establish itself upon several points of the coast. These two populations must have been the Armoricans and the Britons of Britannia. The author adds that in the northern districts, wherever the average stature is high, the men are, for the most part, long-headed, light-eyed, and lightish-haired, with long faces and aquiline noses; while another type greatly preponderates wherever the stature is short, exhibiting rounder heads and faces, hair varying from chestnut (or brown) to black, and eyes seldom black, often hazel, and still more often of a deep blue or green. These two types are the Kymric, or Belgic, of Edwards, and the Keltic; and, while the stature in the cantons, mainly peopled by the former, is about equal to that found in the north-eastern or Belgic departments of France, that in the purely Armorican cantons is comparable to that found in Auvergne, Limosin, and the centre of France generally, where the race of Keltic Gauls still subsists in a state of comparative purity.

So far, the argument is clear and convincing, and we have no unfavourable comment whatever to make upon it, except that we doubt whether M. Broca does not a little undervalue the effects of Teutonic colonisation, which, however, are but inconsiderable, even in our opinion. But an appendix makes us acquainted with certain drawbacks from the accuracy of the recruiting statistics, which, though they do not, in our judgment, invalidate the conclusions of our author, may serve as a warning to those who might otherwise seek to build upon them more

than they can support. It appears that the indications of the recruiting lists, as to the proportion of undersized individuals, are so ambiguous that in one canton (that of Begard), where our author finds 160 exemptions per 1,000, Dr. Guibert, who has written an elaborate monograph on the anthropology of the Côtes-du-Nord, finds no less than 412, while in Ploubalay, at the other extremity of the scale, the former finds 9, and the latter 31 exemptions. These great discrepancies arise from M. Broca's having taken as his basis of calculation the whole number of conscripts, or, as he says himself, the number examined; while Dr. Guibert has taken only those actually measured. Which of these two modes of procedure is likely to yield the result nearest to the true proportion, does not seem quite clear to us, even after considering Broca's explanations. It is almost certain that each of them errs considerably, one by excess, the other by deficiency. It would seem that the law respecting the examination of conscripts, which prescribes a certain order for the consideration of the several classes of exemptions, is far from being so rigorously carried out as one might have expected, and that whereas exemptions for infirmities ought legally to take precedence of those for want of height, this order of procedure is very frequently reversed. It is somewhat reassuring, under these discouragements, to learn that, after all, the order of the several cantons in the Côtes-du-Nord, when arranged with reference to stature, is very nearly the same in the list of Guibert as in those of Broca; and if, as seems highly probable, the same would be the case in the two other departments of Lower Brittany, the conclusions which the latter has arrived at need not be at all disturbed.

ART. X.—A CAUSE OF DIMINISHED LONGEVITY AMONG THE JEWS.

BY SIR DUNCAN GIBB, BART., M.A., M.D., LL.D.

To some extent the observations I have to offer in the present short paper are a corollary to what has been stated in another one. But they have reference exclusively to the Jewish race as seen in Britain.

The practical physiognomist and physiological inquirer must have noticed in large assemblages of persons, members of the Jewish persuasion scattered here and there, with a facial expression and general physique indicative of what the French writers speak of in certain constitutions as *congestions des sangs*. Now this peculiarity, to one like myself, who has paid considerable attention to the indications of a physiological and pathological character expressed by the countenance, is so striking that it never fails to call forth certain ideas in my mind as to the causes which give rise to it. The best examples to be met with are afforded in some of the furniture auction rooms of the metropolis, where will be seen apparently healthy men, with varying degrees of flushed countenance, especially upon the prominent parts of the cheeks, on the exposed part of the forehead, the back of the neck, and occasionally the nose. Little red vessels are seen running short courses, or forming stellated dots about the countenance. The eyes are clear, but have a sleepy aspect, as if the individual had not long been awakened out of a sound sleep; they possess, moreover, a greasy look, which extends not unfrequently to the entire face. The voice is not a clear nor a powerful one, is slightly guttural, and comes out of the mouth as if passing along a tortuous course. They frequently hem, and clear their throats as if they had the remains of a cold about them. In bodily physique they are inclined to be stout; are more or less fleshy, and certainly look as if they fed well and drank well too, although some of them may be extremely temperate as regards the latter. In the countenances of some the eyebrows are knit and surmounted by wrinkles as if the mind were troubled. But it is not so, it is principally due to the cause which mainly gives rise to the condition noticed. Now to this appearance I purpose giving the name of *sanguineo-oleaginous expression*, which I may here remark is a totally different thing from the atheromatous expression to which I drew the attention of scientific men in May, 1860.*

With this sanguineo-oleaginous expression, there is most generally associated more or less complete pendency of the epiglottis, which resembles a piece of flabby drooping crimson leather that has been soaked in water.

These peculiarities, as described, are noticed in a considerable

* *The Lancet*, May 12.

number of men and a few women of the Jewish race in London and other towns of England, and Ireland, and I may say Scotland too. But they are the most numerous in the metropolis. As a general rule, longevity is rare amongst such persons; for they are liable to those diseases of a congestive character which influence the heart, the brain, and the liver.

The cause—indeed, I may say the main cause of all this—is eating food, especially fish, cooked in oil, which being persistently eaten by persons whose diet should be rather spare in regard to the oleaginous element, tends to the destructive formative processes in the system, and engenders a condition which assuredly shortens life. Of course, I have no desire to maintain that the moderate and occasional use of vegetable oil as an article of diet is going to induce the condition I have described; for many of the Jews do not use it at all, I believe, or are so sparingly accustomed to it, that it can do no harm. But, taken daily in fish which has extensively absorbed it in the cooking, it has the same effect as if a stout healthy person were regularly fed upon cod-liver oil. It would add to his weight and size, but his days would be most materially shortened; and, physiologically he would be an aged man before he attained the prime of life, from the changes all his tissues would have undergone.

I could give many instances in illustration of the truth of my remarks from persons and families I have known; but prefer to appeal to the common sense and experience of those of my readers who have been, like myself, observers of human nature among all classes of people in this our common country, but especially in the metropolis and other large towns.

I am well aware that oil is extensively used in some of the countries of Southern Europe, especially in Italy and Spain, as an article of diet and for culinary purposes, and it cannot be said to produce precisely the same effects, such as have been described. But I must say that congestive diseases are exceedingly common in those countries, and life comparatively short; this may be owing, to some extent, to the oleaginous character of the food so generally employed.

At any rate, so far as a portion of the Jews of this country is affected by it, there can be no doubt that it is a great and serious cause of diminished longevity among them, and some philanthropist and earnest anthropologist would be doing good service

if he were to lecture upon the dangers of the persistent use of oil as an article of diet, unless among those who are of spare habit, delicate constitution, and liable to certain diseases wherein its employment would prove useful.

Pendency of the epiglottis through life is an inconvenience, and it limits the span of life to seventy years ; but superadded to the sanguineo-oleaginous expression, it is of serious omen. Drawing attention to the subject here will, I trust, be productive of some good ; and, as most of my inquiries and researches have a bearing upon life with its preservation and extension in a state of health, I trust that my efforts may be seconded by those who have the ability and disposition to do so.

ART. XI.—THE INFLUENCE OF THE PHALLIC IDEA IN THE RELIGIONS OF ANTIQUITY.*

BY C. STANILAND WAKE, Dir. A.S.L.

It will not be necessary for me to give details of the rites by which the Phallic superstition is distinguished, as they may be found in the works of Dulaure,† Payne Knight, and other writers. I shall refer to them, therefore, only so far as may be required for the due understanding of the subject to be considered—the influence of the phallic idea in the religions of antiquity. The first step in the inquiry is to ascertain the origin of the superstition in question. Faber ingeniously referred to a primitive universal belief in a great father, the curious connection seen to exist between nearly all non-Christian mythologies, and he saw in Phallic worship a degradation of this belief. Such an explanation as this is, however, not satisfactory ; since, not only does it require the assumption of a primitive divine revelation, but proof is still wanting that all peoples have, or ever had, any such notion of a great parent of mankind as that supposed to

* Read before the Anthropological Society of London, 5th April, 1870.

† *Histoire Abrégée de Différens Cultes*, vol. II.

have been revealed. And yet there is a valuable germ of truth in this hypothesis. The Phallic superstition is founded essentially in the family idea. Captain Richard Burton recognised this truth when he asserted that "amongst all barbarians whose primal want is progeny, we observe a greater or less development of the Phallic worship."* This view, however, is imperfect. There must have been something more than a mere desire for progeny to lead primitive man to view the generative process with the peculiar feelings embodied in this superstition. We are, in fact, here taken to the root of all religions—awe at the mysterious and unknown. That which the uncultured mind cannot understand is viewed with dread or veneration, as it may be, and the object presenting the mysterious phenomenon may itself be worshipped as a fetish, or the residence of a presiding spirit. But there is nothing more mysterious than the phenomena of generation, and nothing more important than the final result of the generative act. Reflection on this result would naturally cause that which led to it to be invested with a certain degree of superstitious significance. The feeling generated would have a double object, as it had a double origin—wonder at the phenomenon itself and a perception of the value of its consequences. The former, which is the most simple, would lead to a veneration for the organs whose operation conduced to the phenomena—hence the superstitious practices connected with the phallus and the yoni among primitive peoples. In this, moreover, we have the explanation of numerous curious facts observed among eastern peoples. Such is the respect shown by women for the generative organ of dervishes and fakirs. Such also is the Semitic custom referred to in the Hebrew Scriptures as "the putting of the hand under the thigh," which is explained by the Talmudists to be the touching of that part of the body which is sealed and made holy by circumcision; a custom which was, up to a recent date, still in use among the Arabs as the most solemn guarantee of truthfulness.†

The second phase of the Phallic superstition is that which arises from a perception of the value of the consequences of the act of generation. The distinction between this and the preceding phase is that, while the one has relation to the organs

* *Memoirs of the Anthropological Society of London*, vol. i, p. 320.

† See Dulaure, *op. cit.*, vol. ii, 219.

engaged, the other refers more particularly to the chief agent. Thus, the father of the family is venerated as the generator; this authority is founded altogether on the act and consequences of generation. We thus see the fundamental importance, as well as the phallic origin, of the family idea. From this has sprung the social organisation of all primitive peoples. An instance in point may be derived from Mr. Hunter's account of the Santals of Bengal. He says that the classification of this interesting people among themselves depends, "not upon social rank or occupation, but upon the family basis." This is shown by the character of the six great ceremonies in a Santal's life, which are: "admission into the family; admission into the tribe; admission into the race; union of his own tribe with another by marriage; formal dismissal from the living race by incrimination; lastly, a reunion with the departed fathers."* We may judge from this of the character of certain customs which are widespread among primitive peoples, and the phallic origin of which has long been lost sight of. The value set on the results of the generative act would naturally make the arrival at the age of puberty an event of peculiar significance. Hence, we find various ceremonies performed among primitive, and even among civilised, peoples at this period of life. Often when the youth arrives at manhood other rites are performed to mark the significance of the event. Marriage, too, derives an importance from its consequences which otherwise it would not possess. Thus, among many peoples it is attended with certain ceremonies denoting its object, or, at least, marking it as an event of peculiar significance in the life of the individual, or even in the history of the tribe. The marriage ceremonial is especially fitted for the use of phallic rites or symbolism; the former among semicivilised peoples often being simply the act of consummation itself, which appears to be looked on as part of the ceremony. The symbolism we have ourselves retained to the present day in the wedding-ring, which must have had a phallic origin, if, as appears probable, it originated in the Samothracian mysteries.† Nor does the influence of the Phallic idea end with life. The veneration entertained for the father of the family as the "generator", led in time to peculiar care being taken of the bodies of the dead; and, finally, to the

* *Rural Bengal*, p. 203.

† See Ennemoser's *History of Magic* (Bohn), vol. II, p. 33.

worship of ancestors, which, under one form or another, distinguished all the civilised nations of antiquity, as it does even now most of the peoples of the heathen world.

There is one phallic rite which, from its nature and wide range, is of peculiar importance. I refer to circumcision. The origin of this custom has not yet, so far as I am aware, been satisfactorily explained. The idea that, under certain climatic conditions, circumcision is necessary for cleanliness and comfort, does not appear to be well-founded, as the custom is not universal even within the tropics. Nor is the reason given by Captain Richard Burton, in his "Notes connected with the Dahoman," for both circumcision and excision, perfectly satisfactory. The real origin of these customs has been forgotten by all peoples practising them; and, therefore, they have ceased to have their primitive significance. That circumcision, at least, had a superstitious origin may be inferred from the traditional history of the Jews. The old Hebrew writers, persistent in their idea that they were a peculiar people, chosen by God for a special purpose, asserted that this rite was instituted by Jehovah as a sign of the covenant between Him and Abraham. Although we cannot doubt that this rite was practised by the Egyptians and Phenicians long before the birth of Abraham, yet two points connected with the Hebrew tradition are noticeable. These are, the religious significance of the act of circumcision—it is the sign of a covenant between God and man—and its performance by the head of the family. These two things are, indeed, intimately connected; since, in the patriarchal age, the father was always the priest of the family and the offerer of the sacrifices. We have it, on the authority of the Veda, that this was the case also among the primitive Aryan people.* Abraham, therefore, as the father and priest of the family, performed the religious ceremony of circumcision on the males of his household.

Circumcision, in its inception, is a purely phallic rite, having for its aim the marking of that which from its associations is viewed with peculiar veneration, and it connects the two phases of this superstition which have for their object respectively the *instrument* of generation and the *agent*. We are thus brought back to the consideration of the simplest form of phallic worship, that which has reference to the generative organs, viewed as

* See Bunsen's *God in History*, vol. I, p. 299.

the mysterious instruments in the realisation of that keen desire for children which distinguishes all primitive peoples. This feeling is so nearly universal that it is a matter of surprise to find the act by which it is expressed signalised as sinful. Yet such is the case, although the incidents in which the fact is embodied are so veiled in figure that their true meaning has long been forgotten. Clemens Alexandrinus tells us that "the Bacchanals hold their orgies in honour of the frenzied Bacchus, celebrating their sacred frenzy by the eating of raw flesh, and go through the distribution of the parts of butchered victims, crowned with snakes, shrieking out the name of that Eve, by whom error came into the world." He adds that "the symbol of the Bacchic orgies is a consecrated serpent," and that according to the strict interpretation of the Hebrew term, the name Hevia, aspirated, signifies a *female serpent*.* We have here a reference to the supposed fall of man from pristine "innocence," Eve and the serpent being very significantly introduced in close conjunction, and indeed becoming in some sense identified with each other. In fact the Arabic word for serpent, *hayyat*, may be said also to mean "life," and in this sense the legendary first human mother is called Eve or *Chevvah*, in Arabic *Hawwa*. In its relations, as an asserted fact, the question of the fall has an important bearing on the subject before us. Quite irrespective of the impossibility of accepting the Mosaic cosmogony as a divinely inspired account of the origin of the world and man—a cosmogony which, with those of all other Semitic peoples, has a purely "phallic" basis†—the whole transaction said to have taken place in the Garden of Eden is fraught with difficulties on the received interpretation. The very idea on which it is founded—the placing by God, in the way of Eve, of a temptation which He knew she could not resist—is sufficient to throw discredit on the ordinary reading of the narrative. The effect, indeed, that was to follow the eating of the forbidden fruit, appears to an ordinary mind to furnish the most praiseworthy motive for not obeying the command to abstain. That "eating of the forbidden fruit" was simply a figurative mode of expressing the performance of the act necessary to the perpetuation of the human race—an act which in

* Ante-Nicene Christian Library, vol. iv (Clement of Alexandria), p. 27.

† The Hebrew word *bara*, translated "created", has also the sense of "begotten." See Gesenius.

its origin was thought to be the source of all evil—is evident from the consequences which followed, and from the curse it entailed.* As to the curse inflicted on Eve, it has always been a stumbling block in the way of commentators. For, what connection is there between the eating of a fruit and sorrow in bringing forth children? The meaning is evident, however, when we know that conception and child-bearing were the direct consequences of the act forbidden. How far this meaning was intended by the compiler of the Mosaic books we shall see further on.

That we have, in the Mosaic account of the "fall", a phallic legend is evident from other considerations connected with the narrative. The most important relate to the introduction of the serpent on the scene, and the position it takes as the inciting cause of the sinful act. We are here reminded of the passage already quoted from Clemens Alexandrinus, who tells us that the serpent was the special symbol of the worship of Bacchus. Now, this animal holds a very curious place in the religions of the civilised peoples of antiquity. Although, in consequence of the influence of later thought, it came to be treated as the personification of evil, and as such appears in the Hebrew legend of the fall, yet before this the serpent was the symbol of wisdom and healing. In the latter capacity it appears even in connection with the exodus from Egypt. It is, however, in its character as a symbol of wisdom that it more especially claims our attention, although these ideas are intimately connected—the power of healing being merely a phase of wisdom. From the earliest times of which we have any historical notice, the serpent has been connected with the gods of wisdom. This animal was the especial symbol of *Thoth* or *Taaut*, a primeval deity of Syro-Egyptian mythology,† and of all those gods, such as *Hermes* and *Seth*, who can be connected with him. This is true also of the third member of the primitive Chaldean triad *Héa* or *Hoa*. According to Sir Henry Rawlinson, the most important titles of this deity refer "to his functions as the source of all knowledge and science." Not only is he "the intelligent fish," but his name may be read as signifying both "life" and a "serpent," and he may be considered as "figured by the great serpent

* See *Jashar*, by Dr. Donaldson, 2nd edition (1860), p. 45 et seq.

† Bunsen's *Egypt*, vol. iv, p. 225, 255, 288.

which occupies so conspicuous a place among the symbols of the gods on the black stones recording Babylonian benefactions.”* The serpent was also the symbol of the Egyptian *Kneph*, who resembled the *Sophia* of the Gnostics, the Divine Wisdom. This animal, moreover, was the *Agathodæmon* of the religions of antiquity—the giver of happiness and good fortune.† It was in these capacities, rather than as having a phallic significance, that the serpent was associated with the sun-gods, the Chaldean *Bel*, the Grecian *Apollo*, and the Semitic *Seth*.

But whence originated the idea of the wisdom of the serpent which led to its connection with the legend of the “fall”? This may, perhaps, be explained by other facts which show also the nature of the wisdom here intended. Thus, in the annals of the Mexicans, the first woman, whose name was translated by the old Spanish writers “*the woman of our flesh*,” is always represented as accompanied by a great male serpent. This serpent is the Sun-god *Tonacatl-coatl*, the principal deity of the Mexican pantheon, and the goddess mother of primitive man is called *Cihua-Cohuatl*, which signifies *woman of the serpent*.‡ According to this legend, which agrees with that of other American tribes, a serpent must have been the father of the human race. This notion can be explained only on the supposition that the serpent was thought to have had at one time a human form. In the Hebrew legend the tempter speaks, and “the old serpent having two feet,” of Persian mythology, is none other than the evil spirit *Ahriman* himself.§ The fact is that the serpent was only a symbol, or at most an embodiment, of the spirit which it represented, as we see from the belief of certain African and American tribes, which probably preserves the primitive form of this supposition. Serpents are looked upon by these peoples as embodiments of their departed ancestors,|| and an analogous

* *History of Herodotus*, vol. I, p. 600.

† Wilkinson's *Ancient Egyptians*, vol. IV, p. 412, 413; and King's *Gnostics*, p. 31. See also Bryant's *Ancient Mythology*, vol. IV, p. 201. The last named work contains much curious information as to the extension of serpent worship.

‡ See *The Serpent Symbol in America*, by E. G. Squier, M.A. (American Archæological Researches, No. 1, 1851), p. 161 et seq.; *Palenqué*, by M. de Waldeck and M. Brasseur de Bourbourg (1866), p. 48.

§ Lajard, *Mémoires de l'Institut Royal de France* (Acad. des Inscriptions et Belles Lettres), t. XIV, p. 89.

|| Wood's *Natural History of Man*, vol. I, p. 185; also Squier's *Serpent Symbol*, p. 222 et seq.

notion is entertained by various Hindu tribes. No doubt the noiseless movement and the activity of the serpent, combined with its peculiar gaze and marvellous power of fascination, led to its being viewed as a spirit embodiment, and hence also as the possessor of wisdom.* In the spirit character ascribed to the serpent, we have the explanation of the association of its worship with human sacrifice noted by Mr. Fergusson—this sacrifice being really connected with the worship of ancestors.

It is evident, moreover, that we may find here the origin of the idea of evil sometimes associated with the serpent-god. The Kafir and the Hindu, although he treats with respect any serpent which may visit his dwelling, yet entertains a suspicion of his visitant. It may, perhaps, be the embodiment of an *evil* spirit, or for some reason or other it may desire to injure *him*. Mr. Fergusson states that "the chief characteristic of the serpents throughout the east in all ages seems to have been their power over the wind and rain," which they gave or withheld according to their good- or ill-will towards man.† This notion is curiously confirmed by the title given by the Egyptians to the Semitic god *Seti (Seth)-Typhon*, which was the name of the Phœnician evil principle, and also of a destructive wind, thus having a curious analogy with the "typhoon" of the Chinese seas.‡ When the notion of a duality in nature was developed, there would be no difficulty in applying it to the symbols or embodiments by which the idea of wisdom was represented in the animal world. Thus, there came to be, not only good, but also bad, serpents, both of which are referred to in the narrative of the Hebrew exodus, but still more clearly in the struggle between the good and the bad serpents of Persian mythology, which symbolised Ormuzd, or Mithra, and the evil spirit Ahriman.§ So far as I can discover, the serpent symbol has not a *direct* phallic reference, nor,

* I have a strong suspicion that, in its primitive shape, the Hebrew legend, as that of the Mexicans, gave the serpent form to both the father and the mother of the human race.

† *Tree and Serpent Worship*, p. 46. Rudra, the Vedic form of Siva, the "King of Serpents", is called the father of the maruts (winds). See *infra* as to identification of Siva with Saturn.

‡ The idea of *circularity* appears to be associated with both these names. See Bryant, *op. cit.*, vol. III, p. 164, and vol. II, p. 191, as to derivation of "Typhon."

§ Lajard, *loc. cit.*, p. 182. See also *Culte de Mithra*, p. 35.

after all, is its attribute of wisdom the most essential. The idea most intimately associated with this animal was *life*, not present, but future, and ultimately, no doubt, *eternal*.* Thus the snake *Bai* was figured as guardian of the doorways of those chambers of Egyptian tombs which represented the mansions of heaven.† A sacred serpent appears to have been kept in all the Egyptian temples, and we are told that "many of the subjects, in the tombs of the kings at Thebes in particular, show the importance it was thought to enjoy in a future state."‡ The use of crowns formed of the asp, or sacred *Thermuthis*, given to sovereigns, and divinities, particularly to Isis,§ the goddess of life and healing, was, doubtless, intended to symbolise eternal life. This notion is quite consistent with the ideas entertained by the Phenicians as to the serpent, which they supposed to have the quality "of putting off its old age, and assuming a second youth."||

[To be continued.]

CONTEMPORARY LITERATURE.

LES CARTHAGINOIS EN FRANCE: La Colonie Lybio-Phénicienne du Liby. Par Jules Ollier de Marichard et Pruner-Bey. Montpellier: C. Coulet. Paris: Adrien Delahaye.

THIS very valuable memoir gives an account of the discovery by M. de Marichard of an ancient cemetery at Liby, in the Canton of Bourg Saint-Andéol (Ardèche), which M. Pruner-Bey declares, after an examination of the skulls there found, to be pre-Roman and Carthaginian. This conclusion is confirmed by the stratigraphical and archæological data established by M. de Marichard. M. Pruner-Bey calls attention to the existence of Semitic elements in the peoples of the northern shores of the Mediterranean basin, and to the African element in the Iberian peninsula.

This memoir has a full table of measurements, and several plates with figures of Berber and Phœnician skulls.

* See *Mémoires de l'Institut* (Académie des Inscriptions), tom. xvii, p. 97.

† Wilkinson's *Ancient Egyptians*, vol. v, p. 65.

‡ Ditto, p. 243.

§ Ditto, p. 239.

|| "Sanchoniatho" (translated by Cary) in *The Phoenix*, p. 197.

PATRONYMICA CORNU-BRITANNICA ; or, the Etymology of Cornish Surnames. By Richard Stephen Charnock, Ph.D., F.S.A., F.R.G.S. London : Longmans, Green, Reader, and Dyer. 1870.

THIS manual ought to be extremely welcome to all those who rejoice in having Cornish surnames. Although small in size, it is evidently the result of great research. While making use of the labours of others, however, the author has not slavishly followed his predecessors, but has in various places corrected errors into which they have fallen. The principles according to which Cornish surnames have been formed are well shown. Most of them are derived from the names of the localities where their first possessors dwelt, occupations, or personal qualities, or even from natural objects. Some surnames are derived from baptismal names ; and this fact will probably explain, what Dr. Charnock seems to think so inexplicable, the small number of Welsh surnames, as compared with those used in Wales, the former being chiefly baptismal in their origin.

THE LIFTED AND SUBSIDED ROCKS OF AMERICA, with their Influences on the Oceanic, Atmospheric, and Land Currents, and the Distribution of Races. By George Catlin. London : Trübner and Co., 60, Paternoster Row. 1870.

IN this important and interesting work, which is chiefly devoted to geological speculations, a novelty is introduced, which we recognise for the first time in anthropological science. Mr. Catlin gives two maps of part of North and Central America, one antecataclysmic—*i.e.*, before the present distribution of land and water, but subsequent to the apparition of man on this planet ; the other postcataclysmic, indicating the existing distribution. We must confess that we consider that there is a great amount of probability in Mr. Catlin's speculations, bold though they may appear, and that the geological proofs certainly bear out the theories. Appendix C contains a personal vindication of Mr. Catlin against some sceptical doubts of his accounts of the customs practised by the Mandan tribes, mentioned in his *O-Kee-pa*. The testimony of Prince Max Neuwied and others entirely bear out the allegations of Mr. Catlin, of whose accuracy and good faith there cannot be the slightest doubt. It was not fair to throw such charges upon a man who has laboured and suffered so bravely for the cause of true anthropological science, and Mr. Catlin's triumphant vindication will, we trust, be read in the "four thousand libraries, public and private", where his "works are already depreciated."

C. C. B.

INTERMARRIAGE OF KINDRED. Annual Address delivered before the Eclectic Medical Society of the State of New York, January 26th, 1870. By Alexander Wilder, M.D., President of the Society.

WE have received a copy of this address, which has been reprinted by order of the Eclectic Medical Society from their Review. The main subject of which it treats is sufficiently indicated by the above title, and we are glad to see that the author takes the view which has

already been so ably sustained before the Anthropological Society of London by Dr. T. Langdon Down, that consanguineous marriages are not forbidden by physiological law. The data brought together in this address leave little doubt as to the justness of this conclusion.

NOTES AND CONJECTURAL EMENDATIONS OF CERTAIN DOUBTFUL PASSAGES IN SHAKESPEARE'S PLAYS. By P. A. Daniel. London: Robert Hardwicke, 192, Piccadilly. 1870.

THIS is a little work which requires commendation more for the spirit by which its production has been guided than for its special merit. Most of the proposed emendations are slight. Some of them, however, are of sufficient importance to have caused their admittance into the foot-notes of the Cambridge edition of Shakespeare. Whether our author is justified in altering the phrase "blew-eyed", in the line from act i, scene 2, of the *Tempest*, "This blew-eyed hag was hither brought with child", to "blear-eyed", is, we think, very questionable. Shakespeare's hags, although doubtless blear-eyed, were as likely to be blue-eyed as not. The special object of referring to Sycorax was to remind Ariel of her cruelty towards himself; and this cruelty was just of that character which is more likely to be perpetrated by a fair, blue-eyed person than by one of a darker type. People of the latter description, when cruel, are so usually under the impulse of passion or superstition, and there is nothing of this in the character of Sycorax. It must not be supposed, however, that cruelty is a general characteristic of fair people. Just the reverse.

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SCIENTIFIC SOCIETIES.

At the meeting of the Anthropological Society of Vienna, held March 22, Professor Müller read a memoir on the origin of the writing of the Malayan peoples, directed against the opinion of Crawfurd, that the Malayan alphabets (the writing of the Battak, the Redschang, Lampong, Bugi, Makassar, and Tagulo peoples) are an independent invention. He showed, by the form of the single letters, as well as by the manner used to indicate the vowels, that these alphabets were taken from the old Indian writing of the Buddhistic inscriptions. By a comparison of the old Indian with the Malayan alphabets, he came also to the conclusion that this Indian writing originated from an old Semitic alphabet.

ETHNOLOGICAL SOCIETY OF LONDON.—At the meeting of this Society, held April 26, Mr. E. B. Tylor read a paper "on the Philosophy of Religion among the Lower Races of Mankind." This was described as Animism, expressive of the fact that the conception of the soul, as recognised by the lower races, is the starting-point of their religious philosophy. Such a soul, combining the ideas of ghost and vital principle, explains the phenomena of life, disease, dreams, visions, &c. This idea is extended to animals and inanimate objects, which are considered to have souls capable of appearing after their death or destruction. The actions of nature are explained by the animistic theory as being worked or controlled by soul-like spiritual beings. An immense number of these beings are held to be actually human souls or manes. To such spiritual beings are ascribed the phenomena of disease, especially epilepsy and mania. From these spirit-agents the savage polytheist rises to expanded conceptions of greater deities—sun, moon, heaven, earth, &c. At an early period he separates the functions of favourable and harmful spirits, causes of good and evil, and thus Dualism is rooted deeply in the religions of the lower races. The culminating conception of a Supreme Deity is well known to many of these races.—On June 1st Mr. C. Spencer Bate, F.R.S., presented a Report descriptive of the stone circles, avenues, menhirs, cromlechs, cairns, and other pre-historic monuments of Dartmoor.—At the meeting held June 7th, Professor Huxley, President of the Society, delivered an address on "The Chief Modifications of Mankind, and their Geographical Distribution." After referring to colour, hair, and form of skull, as important race characteristics, Professor Huxley described five distinct types of mankind: the *Australioid*, found in Australia, in the

Dekhan, and formerly in the valley of the Nile ; the *Negroid*, including the Negroes and Bushmen of Africa and the Negritos of New Guinea, Tasmania, &c. ; the *Xanthochroic*, distributed through Iceland, Eastern Britain, Scandinavia, North and Central Germany, and extending through Eastern Europe into Asia as far as North-western India, and found also in North Africa ; the *Melanochroic*, located in an area situated between the Xanthochroic and Australioid peoples ; and the *Mongoloid*, a large and somewhat ill-defined group occupying Central and Northern Asia, the two Americas, and Polynesia.

ANTHROPOLOGICAL NOTES.

ANTHROPOLOGICAL SOCIETY OF LONDON.—The last meeting of this Society of the past session was held on Tuesday, the 14th of June, when a very satisfactory series of meetings was brought to a close by the reading of a paper on the Kelts of Ireland, by the President, J. Beddoe, Esq., M.D. The Society has, during the present year, issued its third volume of *Memoirs*, which contains various valuable papers, the most important being that "On the Stature and Bulk of the Inhabitants of the British Islands," by Dr. Beddoe, the President of the Society. We understand that Professor Huxley made some allusion to this Society, in the course of his anniversary address to the Ethnological Society, and that this address is about to be published. In the meanwhile, we are able to furnish our readers with some interesting intelligence as to the progress of anthropology on the continent of Europe and in the United States of America.

ANTHROPOLOGY IN THE UNITED STATES.—The American Ethnological Society, at its last November meeting, which was largely attended, by an unanimous vote resolved on its own dissolution, and appointed a committee, of which the Hon. E. G. Squier (Hon. Fellow of the Anthropological Society of London) was made chairman, to report a plan for the reorganisation of the Society, under the name of "The American Anthropological Society"; and at the same meeting it made over to the prospective new society all its collections, its library, etc. This committee, after various meetings, agreed upon a plan, also on a constitution and bye-laws, and designated their chairman to prepare an inaugural address, to be given at a public meeting to be held on the second Wednesday of September next, on "The State and Requirements of American Anthropological Science." The American Ethnological Society was founded in 1842, having as its principal promoter the venerable Albert Gallatin, for many years Secretary of the Treasury of the United States. It published several volumes of *Transactions*, besides an occasional *Bulletin*; but, in common with most institutions of the kind in the United States, suffered an almost total suspension of operations during the great civil war. Its active

members became scattered ; some of them fell in battle ; and the present decade found the Society, if not disorganised, without that coherence and efficiency necessary to scientific usefulness. This circumstance, and a desire to get rid of the "dead wood" that encumbered the Society, as also a conviction that *Anthropology* better expressed the character of the studies of its most leading members, led to the action already mentioned, and to the change of name. The new Society proposes to publish an annual volume of memoirs, and a monthly journal of proceedings, for the eight months of the year during which the meetings of the Society are to be held.

ANTHROPOLOGY IN GERMANY.—In April last, an interesting meeting of the most distinguished German anthropologists took place at Mayence for the purpose of forming an Anthropological society. According to Section I of the rules of the Society, its name is to be "German Society of Anthropology, Ethnology, and Prehistoric Archæology", but in general correspondence it is to be styled "German Anthropological Society." The members are to meet in some German town once a year, or as often as the committee, or two hundred members of the Society, shall see fit to convene a special meeting. Professor Virchow, of Berlin, has been elected President ; the other members of the committee are Professor Ecker, of Freiburg, Professor Schaffhausen, of Bonn, Professor Semper, of Würzburg, and Herr Vornberg, of Würzburg.—Another society has been formed at Vienna, under the name of the "Anthropological Society of Vienna." The President is the illustrious father of modern pathology, Professor Rokitsky. We are happy to state that friendly relations have been established between both these societies and the Anthropological Society of London. The same may be said of the Anthropological Society of Berlin, which has been for some time in active working. The journal of the Vienna Society, *Mittheilungen der Anthropologische Gesellschaft in Wien*, is full of interesting matter, and will form a convenient medium for informing the fellows of the London Society what their anthropological brethren in Germany are doing.

THE SOCIETY OF THE FRIENDS OF NATURE AT THE UNIVERSITY OF MOSCOW.—This Society is in a very active and flourishing state, especially its anthropological section. In the two last years it has carried out many zoological expeditions : 1. to the shores of the Black Sea. The scientific results (*Les Turbellaires*) are already in the press. 2. A grand expedition to Samarcand, directed by M. Alexis Fedtschenko. 3. To the White Sea, the result of which is only a collection for the Museum. 4. To the Baltic Sea. M. Fedtschenko is on his return from his first expedition to Samarcand, the result of which is large and interesting collections, zoological and ethnographical, including a series of human crania from Tourkestan. The most interesting result is the researches of M. Fedtschenko into the development and natural history of the *Filaria medinensis*, Guinea-worm, or muscular hair-worm, a human parasite which burrows in the cellular membrane between the skin and the muscles. The projects for the current year include an expedition to Constantinople and to the Asiatic shores of

the Black Sea, and another into Oriental Russia, for the study of the tumuli of that region, and the formation of a craniological collection of those provinces. The Society has already this year received a donation of forty thousand roubles for the realisation of a Polytechnic Exposition in 1872, the centenary jubilee of the birth of Peter the Great. It also possesses twenty thousand roubles for the formation of an aquarium. The Society is about to publish its *procès verbaux* periodically.

THE ANTHROPOLOGICAL SOCIETY OF PARIS, during the year 1869, has continued to maintain its high scientific position under the Presidency of M. Lartet, and the vice-Presidencies of MM. Gaussin and Lagneau. M. Broca continues to be Secrétaire-Général, and M. Dally Secrétaire-Général adjoint. The publication-committee comprises MM. Alix, Lagneau, and Simonot. The most important memoir is certainly that of M. Paul Broca on the Primates, which is undoubtedly the most complete treatise on the anatomical differences between man and ape which has been published since the works of Professor Owen. We shall, in our next number, give an analysis of this important work. Professor Busk and Dr. Broca contribute valuable memoirs on the skulls and human remains of the Gibraltar bones-caves. Dr. Pruner-Bey exhibited ten skulls of Esthonians, of which two only were brachycephalous, the eight others, carefully measured by Huech, being decidedly dolichocephalous. The speeches of MM. Giralde's and Alix, in opposition to M. Broca, are especially worth study. The year seems chiefly to have been taken up with the discussion on "transformism" (perhaps a better word than transmutation), and on descriptive and archaic anthropology.

THE SOCIEDAD ANTROPOLÓGICA ESPAÑOLA continues its good work under the secretaryship of Sr. Dr. Delgado Jugo, who has, in a recent visit to England, presented two valuable dolichocephalous Basque skulls, from the collection of Sr. Gonzales Velasco, to the museum of the Anthropological Society.

PROFESSOR BROCA'S ANTHROPOLOGICAL LABORATORY: LIBERAL OFFER TO ENGLISH ANTHROPOLOGISTS.—In a letter addressed to Dr. Beigel, Vice-President of the Anthropological Society of London, Professor Broca, after stating at some length how, on the death of his colleague, Professor Jarjavay, he came into the possession of a laboratory, which he forthwith devoted to the methodical study of anthropology, furnishing it at his own expense with a library, preparations of human and comparative anatomy, crania, skeletons, casts and brains of adults, infants, monkeys, and other mammals, and with all the requisite instruments for anthropometry, craniometry, photography, etc., Dr. Broca proceeds thus: "We now possess as many materials for research as we can desire. My laboratory is open daily, including Sunday, to all the members of our Anthropological Society. Every Thursday between two and three, and every Sunday between two and four, M. Hamy, my preparator, gives practical demonstrations of the procedures of craniography, craniometry, cubage of crania, and mensura-

tions on the living man. Such being the case, I now offer to admit, as fellow-labourers or as pupils, all persons who may be inclined to pass some time in Paris to acquaint themselves with the methodical procedures of anthropological anatomy. If you know of any young men physicians or naturalists who purpose directing their studies towards anthropology, you may, in all confidence, address them to me. There will be placed at their disposal, *gratuitously*, all that is necessary for their instruction, the whole library, and all the instruments and collections of the laboratory. They will, moreover, be directed in their dissecting by myself and by M. Hamy. Therefore I hereby authorise and request you to make this known to the members of the Anthropological Society of London, of which you are vice-president. Accept, my dear *confrère* and friend, the assurance of my devoted and affectionate sentiments.

(Signed) BROCA."

THE INTERNATIONAL CONGRESS OF ANTHROPOLOGY, 1870.—The fifth Session of the International Congress of Anthropology and prehistoric Archæology, to be held at Bologna under the Presidency of Count Giovanni Gozzadini, will commence on the 1st October next, and will last until the 8th. During the meeting of the Congress various excursions will be made; and the Exhibition of Anthropology and Prehistoric Archæology, established by the Italian Government, will remain open until the conclusion of the meeting. The Committee propose the following questions for study and discussion at this session: 1. The Stone Period in Italy; 2. The Caverns of the Shores of the Mediterranean, and especially of Tuscany, as compared with the Grottoes of the South of France; 3. The Lacustral Dwellings and the *Torbiere* of the North of Italy; 4. The Chronology of the Substitution of Iron for Bronze; 5. The Analogy between the Terramare and the Kjoekken Moedding; Various Craniological Questions relating to the Different Races which have peopled parts of Italy. Persons wishing to furnish papers for reading before the Congress, must communicate with Professor Giovanni Capellini, the acting secretary at Bologna, before the 20th August. Those desirous of joining the Congress are to send their names and addresses, with the subscription of twelve francs, to the treasurer, Count A. Guidella, President of the Chamber of Commerce at Bologna; to Professor Michaelangelo Pinto, Italian Consul at St. Petersburg, for Russia; or to Count O. Prampero, Secretary of the Italian Legation at Copenhagen, for Denmark and Sweden. Mr. C. H. E. Carmichael, M.A., of the British Museum, will represent the Anthropological Society of London at the Congress.

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The next meeting of this Association is to be held, under the Presidency of Professor Huxley, at Liverpool in September next. The general Committee will meet on the 14th September, and the several sections will assemble on the following day for business. The sectional meetings of the Association will continue until the following Wednesday. It is believed that arrangements will be made for the formation of a department for the science of man, and delegates have been appointed to attend on behalf of the Anthropological Society of London. Fellows

of the Anthropological Society of London wishing to furnish papers for the Association, and not being able to attend personally at Liverpool, are requested to forward their papers to C. Staniland Wake, Esq., Dir. A.S.L., 4, St. Martin's Place, London, W.C., who will take charge of them.

COLLECTION OF ANCIENT AND MODERN GREEK AND ITALIAN SKULLS.—The Council of the Royal College of Surgeons of England has just made a most important accession to the Hunterian Museum, in Lincoln's-inn Fields, which is of the greatest interest to anthropologists. The museum has been well known already to possess one of the most diverse, and therefore most valuable, collections of human crania in existence. To this the Council has added a very extensive collection of Greek and Italian crania made by the distinguished Italian anthropologist, Dr. Guistimano Nicolucci, whose opportunities have been extraordinary. The collection consists of both ancient skulls and modern ones, both of Greeks, Romans, and of Italians, and numbers 166 specimens—152 from Italy and 14 from Greece. The ancient Italian examples are derived from different regions of the Peninsula. Specimens from the Via Appia and the Via Latina at Rome, and from Ostia. Rare specimens from the ancient Iapygia, in the south-east of the peninsula; from Capua; from Valeria Picena, in the province of Apulia; from Casinum, a city of Latium; from Arpinum and Aquinum, cities of the Volscians. The modern skulls range over most provinces of Italy. They are from Geneva, from Liguria, Parma, Modena, Brescia, Bologna, Turin, Venice, Rome, Ferentino, Banco, Avezzano, Luco, Capitrello, Isoletta, Isola di Sora, Arpino, Naples, Lecce, and other places. The collection of modern Greek skulls is probably the most complete in existence. They include examples from Zacynthus, Paxo, Epirus, Corfu, and Tripoliza, and serve to carry us back to that admirable instance figured by the late Professor C. G. Carus. (*Schädel eines Neugriechen. Tafel xxiv. N. Atlas der Cranioscopie*). Craniologists will be rejoiced to learn that this fine collection has been secured for one of the public museums of England. The Italian Government at the last moment was anxious to retain it in the new capital of Italy, but it was too late. It is by far the most complete collection of the kind that is known. Its acquisition supports the claim of the Council to public recognition. It deserves to be carefully examined and studied in its present safe place of custody, for which purpose the diligent curator of the museum, Mr. W. H. Flower, will, we have no doubt, afford every facility to anthropologists.

WEIGHT OF SIR JAMES SIMPSON'S BRAIN.—The weight of Sir James Simpson's brain, including the cerebellum, was fifty-four ounces. Whilst, as is well known, the ratio between intellect and size of brain is by no means close, yet there can be no doubt that it is very important. Most of our great men have had large crania. The male brain ranges chiefly between forty-six and fifty-three ounces, its average being forty-nine and a half (Quain and Sharpey). That of Cuvier is stated to have weighed sixty-four ounces, and that of the late Dr. Abercrombie sixty-three ounces; but it is possible that some error may

have crept in through the use of weights of differing standards. If not, Sir James's brain, whilst much above the average, did not nearly reach those of the celebrated men we have mentioned; but, at the same time, the convolutions were remarkably numerous; they were, says a correspondent, "twisting and twining round on each other as if they could not find room within the head. The island of Reil was very wonderful."—*British Medical Journal*.

EXCAVATION OF A ROMAN CIRCUS AT PARIS.—Most interesting excavations have been made at Paris, in the Rue Monge, in the shape of a Roman circus and a number of skeletons. The circus is in good condition, oval shaped; its diameter is forty-eight by fifty-five mètres. A proposition to buy the whole area has not been entertained by the Corps Législatif; and so Viscomte de Ponton d'Amécourt has opened a private subscription for the same purpose. On the floor of the arena, groups of skeletons have been found, which, it is supposed, are those of gladiators who were killed performing in the circus. We hope to be able to give a full description and woodcut of this most interesting excavation in the next number of this journal.

MEGALITHIC MONUMENTS.—We learn that Mr. A. L. Lewis, F.A.S.L., is preparing plans, etc., of the principal Megalithic remains in this country. Their publication will form a valuable contribution to Archaic Anthropology. In the meantime we subjoin a communication we have received from Mr. Lewis relative to the proposed excavations at Stonehenge:—"To the Editors of the *Journal of Anthropology*. Gentlemen,—It will not have escaped your attention that a project has been recently laid before various scientific bodies for exploring the area of Stonehenge, with a view to settle: 1. The period, whether stone or bronze, in which it was constructed; 2. whether its object was sepulchral or otherwise. Without wishing in any way to hinder a work which, if carried out with due care, could do little harm and might possibly do some good, I may be permitted to remark that it is very doubtful whether any satisfactory or conclusive results are likely to be attained; because, 1. It is stated on the authority of Aubrey, that George, Duke of Buckingham, in 1620, 'did cause the middle of Stonehenge to be digged,' and that this caused the partial fall of the largest upright, which remains in a leaning position. He adds that 'in the process of this digging they found a great many horns of stags and oxen, charcoal, batterdashes, heads of arrows, some pieces of armour eaten out with rust, bones rotten, but whether of stagges or men they could not tell.' It is therefore obvious that if, as is likely, nothing but stone implements (not recognised in 1620) should now be found, nothing could fairly be founded on the absence of metal. 2. If, as is likely, and as the above extract goes far to prove, interments do or did exist in the interior of Stonehenge, it would be no proof whatever that its primary object was not that of sacrifice, since, as I have observed before the British Association and elsewhere, the same argument as to interments would prove that Westminster Abbey was wholly and solely sepulchral, did we not know as a matter of fact that its primary object is that of a place of worship. I am gentlemen, yours, etc., A. L. LEWIS, 45, Church Road, N."

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No. II.—OCTOBER, 1870.

ART. I.—THE KELTS OF IRELAND.*

BY JOHN BEDDOE, M.D., Pres. A.S.L.

THE determination of the ethnographical position and elements of the Irish people, and of their relations in this respect to other so-called Kelts, and to our own English nation, is a matter of much interest, but of much complexity and difficulty. He who would approach its consideration with confidence should be an accomplished philologist, skilled in the Keltic and Teutonic, and not ignorant of the Euskarian and Ugrian tongues: he should also be well-read in the ancient semi-historical literature of the country, and have observed for himself the physical and other characteristics of its inhabitants.

All I can claim for myself is, that I have done in Ireland what I have done in several other countries, having visited all its provinces and most of its counties, carefully observed the physical characteristics of the natives, and impartially applied to them as far as possible the numerical method.

We cannot complain of any remarkable deficiency of data for determining these physical characteristics. For the skull-form, we have details of thirty-one specimens, mostly from Kerry and Connaught, in Barnard Davis's *Thesaurus*, and of a few in the writings of Pruner Bey, Van der Hoeven, and others; for the living head, a considerable number of observations, chiefly on Munster men, by Davis and myself; for the stature and bulk, my own published statistics, and those of Forbes and Stevenson;† for the colours of the eyes, the extensive observations of Sir William

* Read before the Anthropological Society of London, June 14, 1870.

† In Johnston's Physical Atlas.

Wylde, made at St. Mark's Ophthalmic Hospital, Dublin; and for those of both eyes and hair, a series of my own, partly published in the *Bulletins* of the Paris Society, but the greater part of which hitherto unpublished, is appended to the present paper; together with another, derived mainly from Munster, which appeared in the second volume of our own *Memoirs*; and a third, mainly from Ulster and Connaught, in a paper of my own on Scottish Ethnology.

From all these data the following inferences may be drawn with more or less confidence: The modern Irish skull is usually rather long, low, and narrow, when compared with the average of English skulls; and these characters are still more marked when the comparison is extended to other European races. It seems probable that the Irish have narrower heads than the Welsh.

Barnard Davis* remarks that "the most distinct features in the physiognomy of the western Irish are seen to be derived from the cranial conformation—the strongly-marked superciliary ridges, extending across the nose, making a horizontal line, upon which the eyebrows are placed, and overhanging the eyes and face; the low forehead, receding both laterally and posteriorly, particularly striking in the women. The calvarium, rather capacious in the middle and occipital regions, is of only moderate breadth, without being high, and is not short. The nasal bones much more frequently support a long and prominent nose, especially so at the tip, than the nez retroussé. A strongly-marked prognathous countenance occurs at times."

I may add that the skull-type thus described, which prevails extensively in most other parts of Ireland, as well as in the west, is identical with that exhibited by most of the few primeval Irish skulls I have had the opportunity of examining, and which may be seen in the museums of Dublin and Kilkenny. The Louth Abbey skull, described by Mr. Carter Blake in the second volume of our *Memoirs*, though affected by synostosis, reveals the same fundamental type. In profile, the prominence of the upper occipital region, and the flattening towards the after-part of the sagittal suture, are the most notable points; in a vertical view, the flattening of the temporal region, and the somewhat angular salience of the part abaft the ear, noticed by Daniel Wilson and Massy as belonging to their Keltic type. The cheek-bones are

* *Thesaurus Craniorum*, p. 70.

prominent in the face, but the zygomata not very much expanded.

So much for the head-form. The stature varies considerably in the several counties and districts, as I have pointed out in the appendix to my paper in the last volume of our *Memoirs*. Roughly speaking, the people of Connaught, and apparently also of the centre of the island, are inferior in this respect to those of Ulster, Munster, and the greater part of Leinster. The western coast-men also differ among themselves, the people of Mayo and Connemara being short, while those of Kerry are rather tall, and those of some parts of the county of Galway, for example, Joyce's country,* remarkably so. The comparative rarity of great extremes of stature among the Irish I have elsewhere adverted to;† and the great stature and fine development of the Anglo-Irish and Scoto-Irish gentry is exhibited by the observations and experiments of Forbes.

The colour of the eyes is a point of considerable interest and importance. It is a curious and suggestive fact—suggestive of the worthlessness of unsystematic observation and hasty generalisation—that the Irish are very frequently spoken of as a dark-eyed race; whereas the preponderance of light eyes (grey, blue, or bluish grey, often with a narrow dark rim round the iris), is very decided, and obtains without a single exception in all the forty or fifty localities where I have made observations. Sir W. Wilde, dealing with people from all parts of Ireland, but in larger proportion from Dublin and its neighbourhood, found in 1130 the following proportions:—blue eyes, 34·1 per cent; grey eyes, 54·6; hazel eyes, 2·4; and brown eyes 8·8 per cent. Doubtless many of the “greys” are of a deep shade; but so small a proportion of really brown eyes could not, I think, be found anywhere in Great Britain, except perhaps, in a part of the Western Highlands, where the race is nearly the same; nor anywhere on the Continent, except in Scandinavia. Of local variations in iris-colour I will speak presently.

The colour of the hair, or rather the proportion of the several colours, differs so much in different districts that it is not easy to

* The Joyces are said to have a good dash of English blood, and their appearance favours this belief.

† It is curious, however, that Ireland has produced several remarkable giants.

characterise it generally and correctly. It may be stated, however, that on the whole dark brown prevails, that both black and red are common, while flaxen and light brown are much less frequent than in England.

If we construct a scale shewing the relative prevalence of dark hair over light, obtaining what I have called the "Index of Nigrescence" by subtracting the red hair from the dark brown *plus* twice the black hair, we get the following results:—

Under 30 per cent. come the upper classes in Dublin and Cork, with the people of Enniskillen, Youghal, Cloyne, and the neighbourhood, of Cashel and Cahir, of Waterford town and Wexford county, of Kilkenny and of some other parts of Leinster. The index of nigrescence in these cases is comparable with that found in most parts of England, but in no case is it nearly so low as in many parts of the north and east of that country.

Between 30 and 50 per cent. ranks the general population of Cork and Dublin, of Drogheda, Kildare, and Killarney, of Collooney in Sligo, of some districts about Cork, and of the county of Fermanagh with Western Cavan; also the people of the fishermen's quarter in Galway, called the Claddagh. Most parts of the Scottish Highlands would come in here.

Between 50 and 70 ranks the largest number of districts; viz., the counties of Longford and Leitrim, most part of those of Sligo, Roscommon, and Galway, with the town of Galway and the Arran Isles, Athlone, Pettigo in South Donegal, Dingle in Kerry, and Cappoquin in Waterford. The indices here equal those met with in Wales and Cornwall. Lastly, over 70 stand several districts in the west of Kerry, with Clifden in Connemara, Iar-Connaught, Moytura, and Mallow. Such a preponderance of dark hair does not, I believe, occur anywhere in Great Britain.

The colour of the iris tends to be darker where the hair is dark, but there is no approach to uniformity in this respect. The smallest proportion of dark eyes was found at Youghal, Waterford, Cahir, and Arran: the largest at Moytura and at Pettigo in Donegal. But there is no exception to the rule that light eyes greatly preponderate, and that the hair tends to be very much darker than the eyes, proportionally.

We may now ask ourselves some important questions. Is this prevailing type Keltic or Iberian? Was it brought in by those who brought in the Aryan language, or did it exist in Ireland

previously? Has it any relation to the long-barrow type of Thurnam, which he conjectures to have been Iberian?

While I look respectfully on any view which Dr. Thurnam may propound, and while I by no means reject the one last mentioned, I cannot admit it as established, nor would Dr. Thurnam himself expect us to do so. We have, it is true, the valuable evidence collected by Broca, shewing that the Guipuscoan Basques are long-headed; but the same candid observer and skull-collector has demonstrated that the Basques of St. Jean de Luz are broad-headed; and even the Spanish Basques have a breadth index much greater than that of Dr. Thurnam's long-barrow-men, and somewhat greater than that of the Irish, while their heads further differ from those of the former in being low in proportion to their breadth. They are also remarkably orthognathous, or even opisthognathous, therein resembling South Welsh rather than Irish skulls. The occiput is protuberant, as in the Irish, but the general contour is regularly oval, as may be seen in a figure in Davis's *Thesaurus*. The features of the Basques are said to be small and delicate, the teeth bad, the stature moderate; the eyes, I *believe*, are generally hazel; the hair in the Guipuzcoans is of various colours, and, according to Pruner-Bey, usually brown, while in the broad-headed French Basques it seems to be uniformly dark.

I will next trouble you with a minute description of the people about Ventry and Cahirciveen, in the far west of Kerry. The men are of good stature, and many of them approach six feet. Their heads are long; they project about the occiput, but are not large in the cerebellar region. The nasal notch is deep, the brows are prominent and square, but the frontal sinuses apparently not large, the glabella being inconspicuous. The forehead is flat, of good breadth apparently; it recedes somewhat, and the hair, which is profuse and wavy, but not strongly curled, grows low upon it. The upper part of the head presents a regular gentle curve. The nose is generally long and sinuous, except in those (a decided minority) who are notably prognathous, in whom it is generally of moderate length and somewhat concave: in either case the true Irish nostril, which is long and narrow, occurs. I *think* that more than a due proportion of the fairer people are of the latter class. The eyes are light grey, blueish-grey, ash-grey, dark sea-grey (*bleu de mer foncé* of De Belloguet),

or brown : hazel is rare, and so is clear china-blue ; they are narrow in men, and wrinkles appear about them early. The common colour of hair is a dark brown, approaching black ; but coal-black is very frequent. Red, and a sort of sandy flaxen hue, also occur ; medium brown is rather uncommon. The cheek-bones and zygomata are rather broad, the mouth coarse, often open, the lips thick, the teeth good, the chin rather narrow, with little depression between it and the lip. The lower jaw is narrow, and ascends steeply from near the chin to the ear, and there is often but a slight fold between it and the sterno-mastoid muscle.

This portrait seems to me to differ so widely from that of the Basques, that though the Basques may have furnished an element to the composition of the race, I can hardly think that it was the most important element. Yet it is in Kerry that Spanish blood has been supposed to be most prevalent.

Let us consider some of the supposed characteristics of the Keltic race :

The Gauls were spoken of by the Latin writers, from Livy to Ammianus, as a people of tall stature, though it is indicated that they were not so gigantic as the Germans. Doubtless the Romans exaggerated the size of the Gallic warriors ; such evidence as we can extract from bones and weapons does not support some of their statements ; but as the Romans did attribute great stature to the Kelts, and did not attribute it to the Iberians, we may fairly suppose that the former were taller than the latter. Similarly the Irish, taken as a whole, exceed in stature the South Welsh, a people who presented to the eyes of Tacitus, as they still do to our own, striking points of resemblance to the type supposed to be Iberian.

As to the features of the Gauls, there exists a quantity of monumental and numismatic evidence. It has been laboriously collected and analysed by De Belloguet ; but it is to be regretted that his valuable and learned work is almost wholly void of pictorial illustration. It is pretty clear, however, that the Keltic (Gallic) type, as usually represented, was long-faced and long-headed, and that it differed notably from both the Iberian and the Germanic. As for the latter difference, valuable information may be gained from the monument of Jovinus, which De Belloguet mentions, but which I do not think he had seen, and of which, so far as I know, no accurate representation exists. On

this remarkable relic, which is preserved at Rheims, Jovinus, a man of well-marked Roman aspect, is surrounded by a number of persons of a very different type, and who are almost certainly Gauls. They are tall men, with long and somewhat sharply-drawn features, such as are common nowadays in Champagne and Picardy. On the other hand Lubach, in his work on the ethnology of the Netherlands, figures a number of heads copied from terracotta figures, discovered at different times in the thoroughly Teutonic, though once Romanised, district between the Meuse, the Ardennes, and the Lower Rhine. These heads have a general resemblance to each other, are clearly not Italian in feature, but exhibit types common nowadays in North Germany, Scandinavia, and Great Britain. We may, therefore, confidently affirm them to represent the ancient Germans of the Lower Rhine; and as they differ considerably from the Gallic heads on the tomb of Jovinus, they furnish a strong argument against the asserted ethnological identity of the Germans and the Belgic Gauls; of the Teutons and the Kelts. Next comes the question of hair colour.

It is clear that in the eyes of the Romans and Greeks the Kelts of Gaul were a light-haired or xanthous people; and many found on this fact the notion that all the dark-haired people in these islands must be descended from Iberians, neglecting the probability that both Ugrian and Ligurian tribes may have existed in Britain.

There is, however, a good deal of evidence that the ancient Gauls were not so light-haired as the Germans.* There is no doubt that some classical writers confounded the two, not because they had any strong resemblance, but from carelessness about the nationality, character, and complexion of a parcel of barbarians whom they despised. Most educated people nowadays are wonderfully unobservant and untrustworthy on such matters. I have met with some who had been brought into contact with both Orkney men and Highlanders, without ever finding out the difference between them, though it extends to language, intonation, features, complexion, and moral and mental character, and is pretty considerable in all these respects. And I have heard

* See my own paper "On the Physical Characteristics of the Ancient Germans", in the *Transactions* of the British Association.

educated people say seriously that almost all Scotchmen were red-haired (which is exactly what Tacitus said of the Germans); yet we know that a great part of Scotchmen are not red or fair in any sense of the term.

But when Eustathius says that the Gauls were a good deal like the Germans, but not so fair-haired; or when Tacitus indicates that there were various physical types in Britain, that the Silurians were like Spaniards, and the Caledonians big and red-haired like Germans, implying that the Britons generally were different from both; or when Strabo says, referring to some Britons he had seen, that they were taller and darker than the Gauls, I think some attention should be paid to statements which were obviously intended to be careful and accurate.

Prima facie, Suetonius's story about Caligula's sham triumph, when he chose the tallest Gauls and made them raddle their hair in order to look like Germans, indicates that the Germans were taller and redder or fairer of hair than the Gauls. It has been pointed out that the Germans, at all events the Allemans, as well as the Gauls, used to raddle their hair. The force of the argument is certainly lessened by this fact, but not, I think, wholly destroyed.

The Greeks and Latins appear to have had no other words than *ξανθος* and *flavus* to denote the various shades which we describe as brown and auburn, and the French as chestnut. And as *black*, or something approaching black, was the prevailing colour in the Mediterranean regions, any departure from it was regarded as an approach to yellowness, to flavosity. Thus, in the very precise accounts of the physical aspect of the Cæsars, by Suetonius, we find Augustus, for example, described as having "sufflavus," "rather yellowish," or perhaps "rather brownish" hair, while the colour is not mentioned in other cases, in which it may be inferred to have been black. Anything not black, or nearly so, was probably exceptional, and was called "flavus" or "sufflavus."

The dyed or raddled hair of the Gauls may really have to some extent imposed on the Latin writers. Thus the Venetian beauties of the middle ages are generally credited with flaxen or yellow locks; though it is perfectly well known how they dyed them, and though the contemporary portraits of the men of Venice prove that they were as dark then as now.

Again, there is no modern people whom we can suppose to be mainly descended from the Kelts, who are not generally dark-haired, as most of us count darkness. I know no exception to this, save possibly in some districts of Scotland. For example, take the northern French! I have ascertained, by the examination of more than a thousand individuals, that the Walloons and Champagners are more generally dark-haired than any Englishmen east of the Severn.

Those then who, in defiance of the statements of Manilius and Eustathius, and of other less direct evidence, will have it that the Keltic Gauls, during the Roman period, were extremely fair-haired, and did not differ in that respect from the Germans, place themselves in this dilemma. Either they must allow that the northern French and Walloons have ceased to resemble their Germanlike ancestors in colour of hair, in which case the value of hair-colour, as the great discriminating character of race, is greatly lessened, and almost destroyed; or, on the other hand, they must suppose that the Latin writers always spoke of the Keltic aristocracy as Gauls, ignoring the mass of the people, and that this aristocracy, being comparatively small in numbers, gradually melted away. This latter view is not wholly untenable; yet it seems inconsistent with the facts: 1st, that the whole male adult population of the Gauls appear to have borne arms on suitable occasions, and that the aspect of the inferior class must therefore have been equally familiar with that of the equestrian aristocracy to the Roman soldiers and slave-owners; 2nd, that the supposed conquest of Gaul by the Kelts can have been of no very recent date; and, 3rd, that Ammianus, writing after four centuries of Roman domination, may be supposed to have effaced almost all traces of the Gallic social polity, and confounded its ranks, still describes the Gauls in much the same terms as previous writers, and, indeed, is about the most valuable witness to the xanthosity of the Gauls that we possess. It is true that De Belloguet has an ingenious explanation of Ammianus's testimony, but I think it is much more ingenious than satisfactory. He supposes that Ammianus mistook for Gauls the descendants of Germanic colonists in Belgica.

Another objection to this theory that a minority of fair Keltic-speaking Gauls subdued and Kelticised or Aryanised a majority of dark Iberians, is found in the failure of philologists, hitherto,

clearly to demonstrate traces of the Iberian language to the north of the Garonne. It is true that if we read Ligurians for Iberians, as I should be disposed to do, this difficulty is to some extent eluded, for as we have hardly any idea what the Ligurian language was, it is not surprising that we cannot identify its *débris*.

Let us now try another point of departure. Let us try the hypothesis that the ancient Kelts resembled the modern ones, as we know them; let us suppose Ammianus's fair and robust Gauls to have been just what the Walloons and Champagners and Burgundians now are, except that they were given to soaping and raddling their hair. I see no great difficulty. Most modern Romans would certainly speak of the Walloon population as light-haired (though they have ceased to be extravagant in soap), while most Englishmen would speak of them as dark-haired. Brought to the numerical test, they yield figures and proportions resembling those of the greater part of Ireland as respects the hair, but corresponding more exactly, owing to a greater frequency of dark eyes, with those of the Kymric Kelts of Wales and Cornwall. For dark eyes, it should be noted, are much more common among the Kymri and Bretons than among the Gaels; and it would almost seem as if this difference were fundamental, arising from the incorporation of alien elements by one or both branches of the Keltic stem at an early period.

Let it be granted, then, that the Keltic element in Ireland is likely to have been dark-haired on the whole. I say "on the whole"—uniformity is not to be looked for: even the Basques, who are often quoted as the purest Iberians, present all varieties of hair-colour, including fair shades.

Let us next briefly examine the historical or legendary evidence which the Irish have to give us as to the physical characteristics of their forefathers. De Belloguet is very good and copious on this point. It is undeniable that they varied a good deal: we hear of black, brown, and yellow hair among their kings and heroes. And one race or tribe may have differed from another; according to MacFirbis, the Firbolgs (among whom may have been included any remains of the enslaved aborigines) were black-haired, the Danaans tall and fair, the Milesians "white of skin, brown of hair." These Milesians came from Spain, but it by no means follows that they were Iberians: on

the contrary, they are always represented by tradition as Gaels, and speaking Gaelic. They seem to have overflowed Ireland and a great part of Scotland ; but their intimate admixture with the ancient Irish is indicated by such facts as that of the clan Campbell, the most important in the part of Scotland colonised by the Irish, being reputed Fírbolg.

My ideas, then, respecting the physical history of the Keltic race, are as follows : Whether the original clan or sept which broke away from the Aryan race in Central Asia, carrying with it the parent language of the Keltic tongues, was dark or fair, I do not pretend to know ; but by the time when its descendants, variously crossed with those of the people they had conquered or intermixed with on the way, exposed themselves to the light of history in southern and western Europe, they were, like the Slavonians, intermediate in respect of colour between the very fair Gothic and the very dark Italic and Mediterranean races ; and there were probably some slight differences in this respect between their several subdivisions, some being usually dark-haired, while others were more inclined to red. Ireland, having been peopled mainly by successive strata of grey-eyed, brown- or darkish-haired Gaelic Kelts, more or less mixed probably with Kimric Kelts, Iberians, Ligurians and Finns or other aborigines, was invaded by the fair Northmen, who colonised Cork, Youghal, Waterford, Wexford, Dublin, Limerick, and other ports, and spread up the Suir and Shannon, and across Tipperary, producing a mixed breed, very light-eyed, but oftener dark-haired than the pure Scandinavians.* The same may have been the origin of the fisher-people of the Claddagh, Geileen, &c. The subsequent successive attempts at colonisation by the English, somewhat reinforced and slightly altered the half-Danish population, and transformed the type in the baronies of Forth and Bargy, south of Wexford ; but on the whole they had widespread rather than deep results, affecting chiefly the upper and middle classes, but extending also to the peasantry of central and southern Leinster,† and central, northern, and eastern Ulster. An Eng-

* This Hiberno-Norse type is well represented in many of the pictures of Maclise, especially in his last work, "The Earl of Desmond and the Butlers". Maclise was a native of Cork, and drew Cork features.

† Shortly after visiting Kilkenny, where the features and small proportion of very dark hair had indicated to me the prevalence of English, or, at least, of Teutonic blood, I was spending an evening with the late Dr. Petrie. Speak-

Colours of Hair and Eyes observed in the undermentioned Places and Districts in Ireland.

COLOUR OF HAIR.															Index of nigrescence.				
	Number of persons.	EYES LIGHT.						Total	EYES NEUTRAL.						Total	EYES DARK.			
		Red.	Fair.	Brown.	Dark Brown.	Black.	Red.		Fair.	Brown.	Dark Brown.	Black.	Red.	Fair.		Brown.	Dark Brown.	Black.	Total
Dublin, upper class.....	450	4	16.1	33.8	12.2	8	66.9	2	5	4.9	4.3	4	10.3	...	7	13.3	1.7	22.7	14
Charleville.....	32	...	23.5	32.8	18.8	...	75.1	...	...	3.1	15.6	...	18.7	...	...	3.1	...	6.2	14
Cashel and Cahir, Tipperary	236	7.2	12.7	35.1	19.9	8	75.8	1.3	1.3	3.1	5.9	2	11.8	...	...	1.5	9.1	1.7	12.3
Geileen, fishing village	33	4.5	22.7	24.2	10.6	1.5	63.5	3	...	6.1	6.1	6.1	21.3	...	...	...	3	15.1	18
Youghal.....	120	3.3	17.5	35.8	23	4	80	...	...	2.5	6.1	4	9	...	...	...	...	10.8	19.8
Cork, upper class.....	250	5.6	15	26	14.8	2	61.6	4	1.2	3.4	6	2	11.2	...	1.2	6.6	15.6	38	19.9
Wexford, New Ross, Waterford, etc.....	800	5.2	14.9	32.5	18.4	1.4	72.4	2	4	4	5.4	1.4	11.4	4	1	3.3	10	22	22.4
Enniskillen	267	4.5	12.9	33	14.1	1.5	66	...	1.1	4.1	4.3	9	11.1	4	2	5.1	15.2	28	24.9
Forth and Bargy.....	80	3.7	10.6	30.6	21.2	1.2	67.5	...	2.5	6.2	6.2	...	15	...	...	4.4	11.2	1.9	17.5
Kilkenny	220	7	6.8	33.9	16.2	1.1	65	2	1.1	4.5	5.4	...	11.2	7	...	6	14.1	3	28.1
Cloyne	300	2.7	14.2	32.3	21	1.5	71.7	1.1	1	3.3	7.5	1.3	14.2	...	...	2.2	9.2	2.7	14.1
West Cavan, hill country	50	2	8	40	23	1	74	2	...	9	6	1	18	...	...	2	3	3	30
Cong, Joyce co. Mamurk	75	4	13.3	30	24.7	...	72	...	...	4.7	4.7	4	13.4	...	1.3	7	7.3	4	14.6
Cork, lower class	1800	5.6	12.2	29.7	19.2	1.9	68.6	4	8	3.2	7	1.7	13.1	5	3	2.7	9.8	48	18.1
Kildare	68	8.8	11.8	25	22	1.5	69.1	...	...	2.9	7.3	1.5	11.7	...	...	3.7	12.5	2.9	19.1
Abadda and Whitegate	73	2.9	12.6	37.4	17	1	70.9	...	1	1.9	5.3	1.4	9.6	1	...	1.4	10.2	6.8	19.4
Dublin, lower class	1300	4.3	11.3	28	17.1	1.3	62	3	1.1	4.8	7.5	1.2	14.9	6	5	3.5	14.3	4.2	33.4
Claddagh	170	4.7	12.7	32	20.6	3.5	73.5	...	1.2	1.8	7.3	2.1	12.4	6	...	2.4	7	4.1	14.1
Fermanagh	166	2.1	11.1	28	22.6	2.4	66.2	6	6	3.6	7.2	1.2	13.2	6	6	6	10.5	2.7	20.4
Strokestown, etc.....	79	5.1	12	26.6	22.1	1.2	67	...	...	1.9	11.4	3.1	16.4	...	...	4.4	10.1	1.9	16.4
Drogheda	169	1.8	10.9	34.3	18.9	3.2	69	...	...	3.3	6.8	1.2	11.3	1.2	...	3.7	10	4.7	19.6
Killarney	75	4	10.7	34	18.6	4.7	72	...	...	...	8	...	8	...	...	2.7	14.6	2.7	20
Kilteskin holy well, co. Cork	191	6	12	22.8	25.4	2.9	69.1	...	5	2.1	11.8	2.3	16.7	...	...	1.6	8.1	4.4	14.1

Collooney, Milkharen, etc., co. Sligo ...	124	2-4	10-9	32-6	27-4	4	77-3	...	4	...	4	8-9	1-6	11-5	...	...	6-4	2-4	11-2	47	
Aran Isle	90	3-9	11-1	25-6	30-6	4-4	75-6	...	...	...	3-3	10	3-3	16-6	...	...	5	2-8	7-8	51-6	
Pettigo	53	1-9	8-5	33	13-2	...	56-6	1-9	...	...	...	7-5	1-9	11-3	...	...	1-9	18-9	11-3	53-7	
Galway town	300	4-3	9-2	23	26-7	3-2	66-4	2	2	2	3-2	8-6	1-7	13-9	3	...	2-3	10-5	6-5	19-6	54-4
Sligo town.....	295	3-9	6-3	25-9	24-1	2-9	63-1	1	5	5	2-7	9-3	2	15-5	7	3	3-4	9-1	7-7	21-2	55
Boyle	125	3-6	6	30	20-4	3-2	63-2	...	...	...	...	2-8	8-4	2-4	...	...	2-8	13-6	6-8	23-2	57-6
Thurles	31	...	9-7	32-2	21	4-8	67-7	...	...	...	...	3-2	8-1	1-6	...	...	...	12-9	6-5	19-4	58-1
Manor Hamilton	105	4-8	3-8	30-5	26-7	1-9	57-7	9	...	...	2-9	5-2	3-3	12-3	...	...	2-4	11-4	6-2	20	58-6
Athlone.....	125	5-2	3-6	30	25-2	1-6	65-6	...	...	...	2-9	8	3-2	14-4	...	...	2-8	9-2	8	20	59-2
Longford and Ballymahon	131	2-3	5-3	26-7	30-5	2-3	67-1	1-5	...	...	2-7	10-3	2-3	16-8	...	...	1-5	9-5	5	16	60-4
Oughterard, etc.	95	...	9	28-4	30-5	2-6	70-5	...	...	...	2-6	6-8	4-2	13-6	...	...	...	12-1	3-7	15-8	61-4
Dingle	133	2-6	9-8	24-8	21	4-9	63-1	...	...	...	2-6	8-3	4-9	15-8	7	...	3	8-2	9	20-9	62
Eastern Connemara	100	3	9	24-5	25-5	3	65	...	...	...	...	8-5	3-5	12	1	...	2-5	11	8-5	23	62
Cappoquin.....	55	1-8	5-5	30	24-5	...	61-8	...	...	...	1-8	12-7	5-4	19-9	...	...	14-6	3-6	18-2	62-5	
Valentia.....	36	11-1	7	12-5	12-5	9-7	52-8	...	...	...	5-5	9-7	7	22-2	2-8	...	2-8	7	12-5	25-1	66-7
Carriek-on-Shannon	85	2-3	4-1	31-8	30-6	2-9	71-7	...	...	...	1-2	12-4	2-9	16-5	...	...	4-7	7-1	11-8	67	
Iar-Connaught	95	1-6	8-4	22-6	26-3	6-3	65-2	1	...	...	3-7	7-9	4-2	16-8	...	...	1-1	7-9	9	18	70-1
Cahiriveen	258	6-8	5-8	18-4	18-4	3-7	53-1	4	...	...	2-7	11-1	7-5	21-7	4	...	2-5	11-5	10-5	24-9	71
Miltown, Killorglin, and peninsula } about Cahirciveen	234	4-5	7-7	18-8	22-4	5-5	58-9	9	4	4	2-3	10-2	7-9	21-7	9	...	1-1	7-2	10	19-2	72-2
Moytura, etc.	103	6-3	2-4	20-8	18	5-8	53-3	...	5	5	2-4	10-7	2-9	16-5	...	...	1	19-4	9-7	30-1	75-7
Ventry, etc.	100	2	6	25	25-5	3-5	62	...	...	...	...	8-5	4-5	13	...	...	2	9-5	13-5	25	78-5
Mallow	93	2-1	7-5	16-1	25-8	9-7	61-2	1-1	...	...	2-1	14	2-1	19-3	...	...	...	8-6	10-7	19-3	80-6
Castlemaine, etc.....	150	4-7	4-7	17	32-3	7-3	66	7	...	...	7-10	5-3	16-7	...	...	...	1	8-3	8	17-3	81-7
Clifden	111	3-1	9	21-6	26-5	8-1	60-2	...	...	...	2-2	8-5	10	20-7	9	...	9	10-8	6-3	18-9	89-5
Total.....	9956	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Note.—The persons observed were those met with at the places or in the districts indicated, and, of course, were not all natives, though in most cases, no doubt, the immense majority were so. The return of Dublin upper class, for example, must include some English strangers. In some places, the number of instances is too small to be relied on as yielding any approach to the true proportions of the several colours; but I have not thought it advisable to exclude the results. For example, the fairness of the Charleville people, and the darker colours of the people of Thurles, are confirmed by what other information I can gather respecting the natives of the county of Limerick and of Northern Tipperary respectively. The people of Clare, whence I have no observations worth publication, are, I believe, comparatively fair towards the east, near Limerick, but very dark in the western part of the county. Geleen, a small fishing village, is probably correctly represented, as 33 constitute a large portion of the adult population.

lish cross is sometimes betrayed by the occurrence of hazel eyes, which are almost unknown among the true Gaels. In most of Ulster the Scotch element is very strong, but less easily distinguishable, by reason of the Scotch being themselves partly Gaelic.

In those districts which neither Norsemen, Englishmen, nor Scotchmen ever cared to occupy, or which were protected by their mountains, character, or remoteness from the sea, the native race remained, exhibiting for the most part their original colour-type of grey eyes and dark hair, with frequently an inclination to red, but doubtfully indicating here and there, by some local variations of colour of iris or form of skull, original substrata of allophylian breeds. Thus the tract extending along the Blackwater valley, and then eastward, along the Knockmeledown and Coomeragh mountains, is occupied by a very dark race of Gael;* while at Cahir and Cashel, in the rich plain to the north, at Cork, Cloyne, and Youghal, and towards the coast on the south, and about Waterford to the east, the eyes are lighter and the hair not darker than in most parts of England. Again, near the battle-field of the northern Moytura, in the hills between Roscommon and Sligo, dwells a dark-haired race more often dark-eyed than that last spoken of, and to my eye resembling the South Welsh pretty closely. These may be Iberian, or they may be Finnish, or relics of the Firbolg. The Connemara people are also rather peculiar; they are dark, small, well-made, and well-featured, but have among them clans regarded as of servile origin;† while the Iar-Connaught men, almost equally dark-haired, are taller, and have more of the common Keltic type; the Joyce-country folk, with an English cross, are big and fairer; and the people of the

ing of the collection he had made of ancient Irish tunes, I asked him whether he had visited Kilkenny with a view to that collection. "Yes"; he said, "and I got some good old tunes, but they were not what I wanted: *they were all old English airs.*" He thought the King's County men were often fair. One of them had said to him, talking of the "keen", or wail over the dead, "Oh, if you want to hear that well done, you must go to those black fellows across the river (Shannon)". He agreed with many others in thinking the peasantry of the Golden Vale of Tipperary deeply leavened with Cromwellian blood; adding, in that connection, that the chastity of the Irish peasant women, generally so remarkable, was not uniformly so in all districts.

* Often, and notably at Mallow, tall and handsome.

† A man who was pointed out to me as a specimen of the servile race was short, with a broad face and somewhat Turanian aspect. I had no opportunity of measuring his head.

Aran Isles, also close at hand, have their own very strongly marked type, in some respects an exaggeration of the ordinary Gaelic one; the face being remarkably long, and the chin long and pointed, the eyes light, with very few exceptions, but the hair usually dark brown. We might be disposed, trusting to Irish tradition, to accept these people as representatives of the Firbolg, had not Cromwell, that upsetter of all things Hibernian, left in Aran an English garrison, who subsequently apostatised to Catholicism, intermarried with the natives, became Hibernis Hiberniores, and so vitiated the Firbolgian pedigree.

ART. II.—THE NEGRITOS OF THE PHILIPPINES.*

THESE sketches, or chapters, are the result of Dr. Semper's visit to the Philippines. The author appears to be a professor at Würzburg; but, in the manner common to German professors, does not reveal the subject discussed in his chair. The publication is evidently intended as a preliminary to a book of travels. It embraces heterogeneous subjects: The Volcanoes of the Philippines; the Reefs and Life in the Sea; the Climate and Organic Life; the Negritos and the Heathen Malayan Races; the Mahometans and the Commencement of the Christian Period; the Latest Christian Time. The latter ones only come within our domain.

It is in the fourth sketch that the most interesting subject—the Negritos—is discussed. The Negritos have always presented a very curious problem to anthropologists. The accounts given of them by Spanish writers have been far too imperfect to satisfy our inquiries; and those of some French travellers are evidently so mingled with embellishment as to impede exact knowledge. Notwithstanding that M. de la Géronière's book was cooked by M. Dumas, the novelist, and is called by some a down-right romance, it is still regarded by those who dwell in the islands to contain the most faithful account of the Negritos. This, in itself, is a strong proof of the great room there is for

* *Die Philippinen und ihre Bewohner. Sechs Skizzen.* (The Philippine Islands and their Inhabitants. Six Sketches.) Von Dr. C. Semper. Würzburg: 1869.

more precise and reliable evidence respecting these singular people. Dr. Semper appears to have had good opportunities: whether he has availed himself of them in so intelligent and persevering a manner as anthropology requires remains to be seen.

The name Negritos, which means little Negroes, was applied by the Spaniards to the different dark coloured races met with in the Philippines, from their *primâ facie* resemblance in this respect to African Negroes. But, even in colour itself, which is only one of the subordinate characteristics of human races, they differ from African Negroes. They are decidedly not of so dark a tint. It has been found convenient, in speaking of all the dark races of the Pacific, as a whole, to call them Asiatic or Austral Negroes, thus to distinguish them from the true Negroes of Africa. Those who have a superficial knowledge of these people may look upon them both as intimately related to the African Negroes, and also as, in themselves, presenting a homogeneous whole. Neither of these positions is correct. They differ entirely from all the various races of Negroes of the African continent and islands; and the Austral Negroes themselves differ essentially amongst one another. This matter has been well expressed in a summary manner by the late Mr. Crawfurd, a very high authority. He says: "In the present state of our information, the only conclusion we can reasonably come to is that there are many different races of Asiatic Negroes, wholly unconnected with the Negroes of Africa or Madagascar—equally so with the Australians, and not traceable to any common origin." It is of importance that this should be kept constantly in mind in reading Dr. Semper's book; for he often uses the name Negroes indiscriminately with that of Negritos. In the present state of anthropological knowledge, such want of precision and correctness must not be overlooked.

Among the planters, the Negritos are called "Itas", or "Ahetas", written "Ajetas", but pronounced "Aëtas", more properly "Actas". Dr. Semper is disposed to regard them as having been the first possessors of the islands. At least, he says, of other people who preceded them we have no knowledge; and the stone hatchets occasionally found upon the islands may, without difficulty, be referred to a black population. He himself met with one of these stone hatchets in the centre of Min-

danao.* He does not speak in positive terms upon these subjects; and it is at once apparent that there is no necessary connection between dark-coloured people and stone implements, as those of Scandinavia are quite sufficient to prove. Indeed, it must be admitted that we have no evidence, and Dr. Semper does not exhibit any, to show that the Negritos preceded the Bisayans of the same islands. In the face of the unquestionable fact that it is utterly impossible to convert a Negrito into a Bisayan, or *vice versâ*, the precedence of the Negritos is a mere assumption of not the slightest importance, made in accordance with popular hypotheses. It is incumbent upon anthropologists, as they value anthropology, to point out, if not to protest against, such assumptions. Dr. Semper again draws the conclusion, wholly unjustified, that the presence of these stone implements makes it probable that the primitive race of the trans-Indian islands must have been nearly allied to the Papuans. There is no evidence, the result of observation, to show that the Bisayans may not be the primitive population of the Philippines, equally and primarily with the Negritos. Nor is there any more reason to believe that the latter formed stone implements than that

* In his Note, Dr. Semper refers to the *Journal of the Indian Archipelago*, vol. v, p. 84, which is a mere announcement of a memoir upon some Stone Wedges and Weapons found in the Island of Java, by Dr. Swaving, which Mr. Logan appears not to have been able to translate. Dr. Semper regrets that he is not able to refer to the original memoir in the *Journal for Netherlands India*, in order to compare Dr. Swaving's figures with the stone axe found by himself in Mindanao. The original "*Berigt en afteekening van eenige Steenen Wiggen en Wapenen*", has a fine plate, which represents five stone implements, three of which are from Java, but the two other objects, figs. 4 and 5, are clearly the unpolished flint dagger and spear-head of Scandinavia, from which country, there need be no question, they have been derived, however they may have got mingled with the Javan ones. In the *Journal of the Indian Archipelago*, the editor, Mr. Logan, informs us that these stone implements are "an addition to the evidence afforded by language that Java was, at an ancient period, peopled by tribes of African, or Indo-African derivation, like the other islands of the Indian Archipelago"(!) It may be asked, what limits can restrain a genuine philologist? The Javan stone wedges are quite peculiar implements, carefully and accurately formed and polished, and wrought out of very beautiful close-grained minerals—many of them of agate and other hard stones, of various colours. The singular one which slightly resembled a gouge, of which the writer possesses an example, has probably been an ornament or an ensign of rank and dignity. See *Archæological Journal of the Institute*, vol. xii, p. 116, where some diagrams of these curious objects are given.

the former made them. The Javan examples are unquestionably met with in an island in which there is no record of any dark race having ever existed. This line of argument forcibly reminds us of Dr. Prichard's assumption, in the first edition of his great work, where he says: "This leads us to the inference, that the primitive stock of men were Negroes, which has every appearance of truth." He soon found out that such an hypothesis was wholly untenable.*

In *limine*, Dr. Semper may be congratulated upon keeping to the Negritos and other races of the Philippines, and telling us what he has observed of them. He has not made them the thread of a discourse, embracing all the dark races of the Pacific, not omitting all the savage people of all parts of the earth. This is a temptation to which authors upon these obscure people are greatly exposed, and can be nowhere more forcibly exemplified than in some recent and otherwise commendable volumes upon the Tasmanians. Those who hoped to find in these latter works their long pent-up curiosity satisfied, really find themselves grievously disappointed.

Dr. Semper informs us that: "In the south of the Philippines the Negritos appear to be entirely rooted out. Certainly all authors mention that in the east, as in the interior of Mindanao, some pure Negritos still live; an opinion which rests upon an entire want of knowledge of the races of that island.† Only the few Mamanuas in the east of Mindanao have Negro blood in their veins, but they are a mixed people, which is obvious at first sight. With the exception of the island of Negros, where some few Negro families still live, namely, in the mountainous region round the volcano, the autochthones upon the whole of the islands of the Visayas have disappeared." The name Visaya, or Bisaya Islands, is applied to the islands between Luzon and Mindanao. "In Southern Luzon they also appear to be absent. In going more and more towards the north they are always to be

* Dr. Jagor, another recent German visitor to the Philippines, to whom we shall have to refer hereafter, candidly admits that the assumption of the Actas as the primeval stock of the islands, appears to be wholly wanting of every definite proof. (*Sitzung der Berliner Gesellschaft für Anthropologie*, 15 Jan., 1870, p. 5.)

† Mr. Crawford's words are: "The inhabitants of Mindanao appear to be all of the true Malayan race, without, as in some other islands of the Philippine group, any Negritos." (*Dict.*, p. 279.)

met with sporadically. Thus, upon the east coast, upon the island of Alabat, near Mauban, in the mountain chain of Mariveles and Zambales, on the east coast near Baler, then near Casiguran, until at last they inhabit the coast exclusively from Palanan to Cabo Engaño, as well as the mountainous region of the eastern chain. If anywhere, they are to be found here in their greatest purity of physical as well as mental character," p. 49.

Dr. Semper begins his description of the Negritos with an account of their stature, but unfortunately does not tell us what measurements he made, or whether his statements are the result of measurements. "With an average height of four feet seven inches for the men, and four feet four inches for the women, their limbs are, corresponding to this stature, uncommonly slender, but well formed." Dr. Semper's dimensions are expressed in Parisian measures, and therefore correspond to four feet ten and a half inches for the *men*, and four feet seven inches English for the *women*. These measurements are rather larger than those given by others. Mr. Windsor Earle says they rarely exceed four feet and a half in height. Mr. Crawford says their average stature does not exceed four feet eight inches. Mr. Alfred Wallace states that they only average four feet six to four feet eight inches.

Dr. Semper goes on to say: "They have round, particularly in the women, distinctly-expressed countenances, with very thick, brown-black, shining and woolly-curved heads of hair.* With straight but little prominent jaws, and but slightly swollen lips, with very flat and broad noses, and dark copper-brown colour of the skin.† Thus these Negroes form corporeally an abrupt op-

* This description agrees in some measure with the specimen of the hair of the Negrito woman in the writer's collection. It is of a good length, but crisply curly, so as to bush out considerably, and of a rich dark brown, almost black, colour. In another example, from the head of a Negrito man, of about sixty years of age, the hair is quite contrasted; it has grown in very small curly locks, just raised above the surface of the scalp, and is turning grey from age. It is most likely that this last example shows the hair of the true Negrito; the former one of the Negrito of mixed breed, with some Tagal or Bisayan blood in her veins.

† Mr. Crawford says the colour is that of "over-burned coffee". Such a tinge does not agree with the Ajetas of Norris's edition of Prichard's *Natural History of Man*, and Earl's *Native Races of the Indian Archipelago*. The original of this plate, which is in Mallet's *Les Philippines*, presents a more subdued brownish, not a black-blue tint, and is much nearer to Crawford's "over-burned coffee." The smart airy attitudes of this "Acta" man

position to the larger, more angularly built usurping Malays. By the uncommon slenderness of their legs and the proportionate largeness of their bellies—named “muy barrigodos”: very big bellied, by the Spanish historians—they remind us of the smooth-haired inhabitants of Australia. The mildness of the tropical climate accommodates itself wonderfully to their almost naked bodies, which they defend under easily moved screens, such as our stone-breakers have, against violent wind and rains, or the too powerful sun. Stretched under these screens, they lie upon the hot sand of the sea-shore, or on the borders of a mountain brook, always ready to bear the rapidly-constructed shed some miles, if want of food impels them to it. They turn themselves more carefully to their ornaments than to the aprons and leg bandages they wear, which ornaments take the form of wonderfully wrought ear pendants, rings for the legs and arms, neck chains, and some utensils for tobacco and betel chewing, which they make out of roots and pieces of wood, as well as plat from the fibres of the Pandanus. Only the richest amongst them are allowed the luxury of a mat to sleep upon, obtained from the Christians. They also employ tattooing, although not to the same extent as the Malays in the western cordillera of Luzon. With respect to the ornaments produced by them of clearer lined patterns, the Negritos living in different places do not deviate from one another, save in the mode of tattooing. The Negroes of the east coast from Baler up to Palanan employ a needle for tattooing, as is also used by the Malays.* Those of Mariveles, on the contrary, make long cuts in their skin, by the combination of which they produce the destined pattern. By these the design is raised up in the form of high scars or wheals, whilst in the Negroes tattooed with the needle the skin remains tolerably smooth.

and woman of Mallet, which have been for some time looked upon as classical figures of the Negrito race, indicate rather the European artist than the Philippine natives; they do not agree with Dr. Semper's “*muy barrigodos*” at all, and differ much from photographs of both a Negrito man and of a Negrito woman which the writer has been so fortunate as to obtain. At the same time, it is worth being noted, that both Mallet's plate and our two photographs precisely represent the short curly hair of the most accurate describers.

* This is conclusive evidence that neither race can be as black as African Negroes, in whom the ornamentation of the skin cannot be produced by proper tattooing, but by weals or scars.

"Their character is mostly better than its reputation. By nature they are confiding, free, and open, distrustful only in intercourse with the Christians, the spoilers of their land; enduring, and in disposition far exceeding their Malay neighbours; willing to do services so long as these lie in the domain of their customs, and of an unlimited love for individual freedom, and for a roving life. Of their really good nature I obtained a friendly proof in the land of the Irayas, of the western side of the Cordillera of Palanan in Luzon. In the one half of this race I found a very inhospitable reception, and here the inhabitants appeared to refrain almost entirely from all intimate intercourse with the Negroes; but, in the other half, the unmistakably great mixture with the Negroes had impressed all the people in so friendly a manner, that the thoughts of the weeks I spent amongst them belong to the most agreeable recollections of my travel. Great, unconquerable love for their homes and for their wandering life is frequently expressed in the narratives of the Spaniards concerning Negroes caught and educated in Manilla. Yet we should probably err if we regarded this untamable impulse to rambling about in the mountains and on the shore of the sea to be the essential attribute of these needing-little children of nature. It rather appears that the unquestionable disposition to it has been developed by the old persecution for centuries on the part of Malays, and afterwards of Christians, and especially by the evermore increasing separation of any political connection among the individual clans of this Negro race in their present extremity. All so-called wild people have a certain tendency to isolation. And, where the close connection of the clans with one another, which, in the primitive state and in scattered populations, is never very intimate, is forcibly lost, and only inimical races interpose themselves between them, which cut off every possibility of intercourse, there will this love of independency of individuals ever more arise, and the little need of union of great masses in like forms of society must necessarily die out. And as this prejudicial influence of the separation of the political connection of nearly allied races expresses itself in the social state of the family groups living in an isolated manner, in the gradual loss of all their peculiar properties, even their language, so there manifests itself on the other hand the now almost al-

mighty influence of climate in daily life, in their struggle for existence."

Too much confidence is not to be placed in this kind of hypothetical reasoning. We observe the same phenomena in other races, which have not been persecuted and isolated by the intrusion and intervention of foreign peoples. There has not been discovered any close political connection among the tribes of the Andaman Islands, and there are no grounds for thinking that such ever existed at an anterior period. The isolation of the Negritos is probably congenital and natural to them, and there is no reason to date its origin to a period posterior to any supposed advent of the Bisayan races in the islands.

The mode of life of the Negritos is thus picturesquely described by Dr. Semper: "Without any significant trade, without agriculture, the hearts of some kinds of palms, and the roots of many wild Aroidées, as well as the chaseable animals of the forest, deer, swine, and the fishes of the sea and of the rivers, form their exclusive food. They move about in small troops of six to eight families, sometimes in the valleys of the mountains, on the shores of the small streams or of the sea; according to the time of the year here or there, where a root of which they are fond ripens in abundance, or a desired kind of fish comes up and appears in shoals on the shore. The instruments they use in fishing and in the chase are at the same time their proper weapons. With bows and arrows they waylay the deer and swine in the forest, as well as the hostile-minded Ylungut;* in the water of the sea and the rivers, the fish. With their iron knives, the so-called bolos, which they obtain from the Christians, they defend themselves against an insidious attack of their enemies who are cowardly but exceed them in numbers; whilst in the morning, with the same knife, in peaceful labour, they dig out the roots which serve them for sustenance the following weeks. When, annually, the ascending sun, in April and May, in connection with the abundant rains, calls forth thousand-fold life, and all the forms of butterflies and other insects, which in colder and drier times of the year only present themselves in few indi-

* Mallet describes this tribe as of small stature, not robust, and of a bad constitution. They lead a miserable life by the aid of brigandage, to which they are devoted, and in which they are very expert. They lay in wait near the roads most traversed, and murder those who fall into their hands. They shoot poisoned arrows.

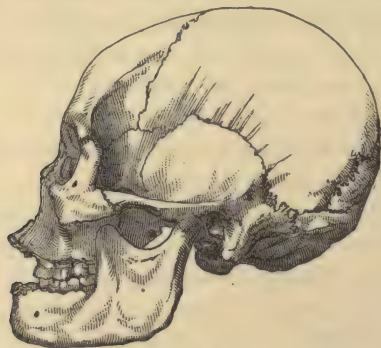
viduals, but now appear at once in hundreds, then comes also the time for the festive harvests of the Negritos. Then they come out, great and small, penetrate into the thickest forests, seek out the longest tree-stems, already pointed out to them by their scouts, in the crown of which a swarm of wild bees has rejoiced for months in a store of honey. Now the honeycombs are full, for the time approaches at which moisture and the warmth of the sun bring the larvæ of the bees to maturity. But before these awake to life the Negro, longing for honey, has, by the smoke of poisonous plants, driven the swarm of bees out of their tree. The honey itself the Negro relishes greatly, the wax he presses into little purified cakes, which he barter for glass beads, straw mats, some rice, and the tobacco beloved by all, with the Christian merchant. But soon are the rice and the honey consumed, and then the old wanderer goes again from one place to another, restless and without repose, sometimes to the sea, sometimes into the deepest mountain defiles, until at last, in the next year, the increased buzzing of the insects indicates to him the return of the honey month."

So far goes Dr. Semper as to the Negritos. There is, probably, but little that is new in his statements, yet they present the freshness of an observer and they materially confirm what has before been said upon these interesting people. There are many other small tribes in these rich and beautiful islands, especially in that of Luzon, all of which deserve to be carefully described, and accurately discriminated from the Negritos. Mallet says the tribes are so numerous and varied that it is difficult to indicate their names with correctness. Probably at the present time it may be well to confine ourselves to the notice of Dr. Semper's account of the Negritos, merely adding a few words upon their craniology, and then allude to the fact, which is of great interest, of the recent discovery of artificially-distorted skulls in the Philippine Islands by Dr. Jagor.

The skulls of Negritos are very rare objects in European museums. There is one in that rich but inexorable region, the Galerie Anthropologique of the Jardin des Plantes. It was presented by the famous M. de la Geronière. It has an *Os Inceæ*, and is figured in Jacquart's *La Valeur de l'Os Epactal*. There are three contained in the writer's collection. Dr. Schetelig, the anthropologist who visited Formosa and the Philippines, informed

us, when in England, that he had secured the bones of a skeleton of an Acta. Whether these have yet been articulated is doubtful.

The three Negrito skulls have all belonged to men. They are small, have an average circumference of 19·4 inches, equal to four hundred and ninety-three millimetres. Two of them which have been gauged yield a weight of brain 40·53 ounces, or one thousand one hundred and forty-nine grammes. The average brain weight, deduced from the capacity of two hundred and ten crania of different Oceanic races, is 45·63 ounces, or one thousand two hundred and ninety three grammes. One of these skulls is brachycephalic, the two others dolichocephalic. In point of *size* they agree very much with the skulls of Andaman islanders. Of a woman of this race we have the measurement of her stature, which was four feet seven inches.



CRANIUM OF A NEGrito FROM PANAY.—QUARTER SIZE.

Still the two series of crania of Mincopies and Actas differ in form considerably, to judge from the specimens we have examined. Of the former we have two examples. They both look much like the skulls of women, yet one of them is very thick. They both present the frontal suture persistent. They are both decidedly brachycephalic, a feature much less strongly marked, to say the least, in Negritos, for among the three crania one only is brachycephalic, the two others being decidedly dolichocephalic. The skulls of the Mincopies are remarkable for greater elevation and breadth in the frontal region; whereas those of the Negritos have low, narrower, and receding foreheads. They are also

somewhat more prognathous than the Mincopies. In fine, it is surprising to see the great difference between the skulls of these two races of diminutive people, who have been often confounded and treated as if they were the same.

Dr. Feodor Jagor is well deserving of the thanks of anthropologists for his researches in the Philippines. He has examined the caves on the south coast of the island of Samar, formed in the steep chalk cliffs. These caves were used by the old inhabitants, called *Pintados* by the Spaniards, on account of their tattooing, as burial-places, and contained numerous coffins, utensils, weapons, and trinkets, until a zealous priest, professing Christianity, did all in his power to destroy them. Dr. Jagor gives an interesting account of the manner in which he succeeded in collecting some of these remains at Nipa Nipa (*Zeitschrift für Ethnologie*, i. 80). He also obtained skulls from the cave of Lanang, on the east coast of Luzon, and upon these and the crania from Nipa Nipa, the distinguished president of the Berlin Anthropological Society, the accomplished Professor Virchow, read an excellent memoir.* What is most striking among these skulls is that one of them is considerably deformed by art, in the mode employed by the Chinooks and other Flatheads of America. In one or two other examples the deformation has not been carried on to the same extent, and in others the natural form of the cranium has not been interfered with. Craniologists were not aware that this extraordinary practice of deforming the skulls of infants had ever been in use in the Philippines, but Virchow, by a reference to the *Voyages Curieux* of Melchizedec Thevenot, shows that he reports a description of the Philippines by an ecclesiastic, who asserts that the inhabitants of some of the islands had the custom of placing the heads of their newly-born children between two boards, and so compressing them that they no longer remained round, but were extended in length, and that a flat occiput was regarded by them, as it was by the Sandwich Islanders, as a mark of beauty. In the Society's report of the meeting, Virchow is always represented as referring this account to the end of the sixteenth century. We should rather ascribe it to the end of the seventeenth century. Thevenot lived at that time, and published the book in question A.D. 1663 to 1672.

* "Sitzung der Berliner Gesellschaft für Anthropologie, am 15 Jan., 1870." Reprinted in Bastian and Hartmann's *Zeitschrift*, ii, 151.

It is scarcely necessary here to follow Virchow in his excellent critical memoir upon these skulls. He refers, first of all, to the deformed skulls which have been found in different parts of Europe. At an early period in Austria, where they gave rise to the opinion expressed by Fitzinger and Retzius, that they were the remains of Avars. These examples, and those subsequently found, it should be distinctly noted, are deformed cylindroidally, which we have shown to be the most universally diffused mode of distortion, not in the manner of the flat-heads and of the Lanang skulls. Virchow points out that Blumenbach, in the first edition of his *De Varietate Nativa*, speaks of having in his possession an ancient skull dug out of the Göttingen cemetery the preceding year, which also appears to have been cylindroidally deformed. Virchow mentions the controversies caused by the discovery of these supposed Avarian skulls; and justly adds that these controversies have now lost their ground, since such crania have been met with in so many different parts of Europe. They now can scarcely be regarded as all pertaining to any one particular race of people. In the year 1857, the writer expressed a similar opinion, saying that they were probably not Avar skulls, but belonged to tribes who had died in their native seats.* A Turkish example, recently discovered, tends to confirm this view. It was found in the Turkish cemetery Küsschüch Mezaristan, at Pera, and is in the hands of Dr. Weisbach. It presents evident marks of this cylindroidal deformation. Virchow most rationally opposes the notion of the propagation of this deformation from one part of the world to another by the wandering of tribes, deduced, as it has been, on the futile ground of the resemblance of the mode of distortion among different and remote peoples. He says that, by a certain accordance in the human mind, which often enough takes us by surprise, the like customs have established themselves in the most diverse places.

One of the main points to which Professor Virchow draws attention, and it is a point of much interest in its relation to what precedes, is, that the skulls from the caves in the Philippines, which may be regarded as old, if not ancient, and must, at latest, be attributed to the latter end of the seventeenth century, since no author mentions the custom of distortion after

* *Crania Britannica*, p. 42.

Thevenot, are brachycephalic. Hence, it appears to be quite unquestionable, that this brachycephalic race, which must have inhabited the islands for a very long time, had nothing to do with the Negritos. Virchow at this point falls into an error in his reasoning; for he goes on to say that *the Negritos stand in relation to the Australians*, who are all distinguished by the relative small breadth of their skulls in comparison with the relative considerable length. Professor Virchow qualifies this supposed relationship between the Negritos and the Australians with the remark, "so far as is yet known". It is apparent that he has in some measure allowed himself to be imposed upon by the fashionable jumbling of races together. Little or nothing had been known of the craniology of the Negritos anterior to the study of the Acta skulls mentioned in this notice. But these crania go far to prove that the Negritos are a dolichocephalic race. This is quite sufficient to confirm the affirmation of Virchow, that the ancient brachycephalic race of the caves has nothing to do with the Negritos. And this discrepancy between these ancient people and the Negritos is a valid ground for the rejection of the hypothesis of Dr. Semper, that the Negritos were the aboriginal inhabitants of the Philippine Islands; *i. e.*, in the sense of being the sole autochthones, from whom the other races have descended by permutation, either in the Darwinian or any other way. That they are aborigines, or autochthones in the truest sense, there cannot be any reasonable doubt. The only question for doubt is, whether the Bisayans are not equally aborigines.

The superficial observations, upon which the opinion alluded to by Professor Virchow, of the relationship between the Negritos and the Australians, is founded, will not bear any examination. The Australians constitute most clearly a race *sui generis*, and their like is not to be found in any other race out of their own continent, either ancient or modern. Even their nearest neighbours, the Tasmanians, with whom they have been constantly confounded, differed from them most distinctly. And if the usual specific characters are of any value whatever, the Australians and the Negritos must be entirely different races, having nothing whatever to do with one another. It is not necessary in this place to point out the specific characters of these two peoples, and to show how much they are contrasted.

That resemblances may be found to exist between the Australians and almost any other race of mankind, which are made the bases of hypotheses, is not at all questionable.

Professor Virchow next endeavours to make a comparison between the ancient skulls of the caves and those of modern so-called Malay populations, and also of the modern races of the Philippines. He acknowledges that his materials for such comparison are inadequate. Still, as far as they go, they lead him to conclude that the cave skulls do not agree with the so-called Malays of the Indian Archipelago, nor with the Bisayans of the Philippines.

Another series of six skulls, taken from another cave at Nipa Nipa, Virchow finds to belong to a distinct category. They have a more modern appearance, and are distinguished by presenting unequivocal marks of syphilis. Hence, it is probable that they belong to a period soon after the Spanish conquest.

This memoir of Professor Virchow could not be entirely passed over, although we have here considered it very imperfectly, as it forms an important supplement to Dr. Semper's description of the Negritos.

ART. III.—MR. DARWIN'S HYPOTHESIS OF PAN-GENESIS AS APPLIED TO THE FACULTY OF MEMORY.*

BY ALFRED SANDERS, M.R.C.S., F.A.S.L.

MEMORY, being one of the faculties of the human mind, falls naturally within the scope of anthropological science, which is devoted to the study, not only of man in general, but also of the man in particular, and I have, therefore, the less hesitation in laying these few remarks before the Society, hoping to elicit during the discussion some views or opinions which may serve to throw some light on a difficult and obscure subject.

It is necessary for my purpose that I should first of all take into consideration this question, Is thought a function of the brain? This, I think, can only be answered in the affirmative.

* Read before the Anthropological Society of London, April 19th, 1870.

One fact out of many may be cited as being sufficient to prove it. I allude to the fact that a small spicula of bone pressing on the brain annihilates all thought and feeling; this is the invariable result of any pressure on that organ, however produced. As an illustration of my meaning, I will take the case of a person struck with apoplexy; in this case, a small quantity of blood being effused in or near the ventricle, the person becomes immediately insensible and practically dead to the external world; he may either die in reality, or recover his senses wholly or partially; in the former case, the damage to the brain is too great to allow the machine to keep on going; in the latter, either not any, or very few, fibres are broken, but only pushed aside, the person returning to health or remaining more or less imbecile. The sense of vision gives a good representation of the relation of mind to the brain. We have here an apparatus, the retina, calculated to receive impressions or pictures of the external world; a commissure, the optic nerve, conveying these impressions to the inferior ganglia of the brain; another commissure, the diverging fibres, conveying them thence to the peripheral cells, where the mind first becomes cognisant of them, but how is a mystery too deep for our present powers, and which I have not time here to examine. This being the process gone through in seeing, let us now cut through the optic nerve: total blindness is the result. The apparatus, the eye, is perfectly healthy, and able to represent external impressions; the ganglia at the base of the brain are perfectly healthy, and able to receive and transmit those impressions to the peripheral cells; the external force, light, is there, still capable of giving those impressions. Where, then, is the fault? The conductor is broken, the electricity cannot pass, no communication can be made, and no impression can be received.

Now, let us draw the parallel between this case and that of the clot in the ventricles. We have here, also, an apparatus, the peripheral cells, calculated to receive the impressions of the mind, and to transmit them through a commissure, the converging fibres, to the ganglia at the base of the brain; thence, through the medulla oblongata and the nerves, which may also be called commissures, to all parts of the body. In the former case, we cut through the optic nerve; in the latter, we have a clot of blood breaking through one of the commissures: all the

rest of the apparatus, the receiver and transmitters, may be perfectly healthy, yet there is no apparent thought or mind; the machine is out of order, the conducting wires are broken; but as, in one case, the light continues to exist although the sufferer cannot see, so, in the other, it is just possible that mind may still exist although the sufferer cannot feel or think. Thus, it will be seen that thought is not considered to be a product of the brain-cells, any more than light can be a product of the cells of the retina; yet these brain-cells are necessary for the communication between mind and the external and internal world, and are used up in the process of thinking and willing, in the same way that the cells of the retina are used up and require renewing in the process of seeing.

Having thus considered the question whether thought is a function of the brain, I will now turn to the consideration of that faculty of the mind which is called memory. Sir William Hamilton, as quoted by Mr. John Stuart Mill, regards memory as the mental representation of events passed away, and the representation only, as it is self-evident that what is past cannot be present, and that the trust in memory is entirely a belief, there being no mode of verification. Mr. John Stuart Mill,* in his theory, considers mind to be a series of feelings, and nothing more, and looks upon memory as an ultimate fact incapable of explanation, which appears to me to be a great defect; for, surely, a theory expressly framed to give an explanation of mental phenomena ought to include memory, which can be no more an ultimate fact than mind itself, and if one is capable of explanation so ought the other to be.

Let us now see what light can be thrown on the opinions of one philosopher by those of another. I allude to Mr. Darwin, whose theories, however much they may be opposed or controverted, certainly mark the commencement of a new era in the history of the study of the organic sciences. Mr. Darwin's hypothesis of Pangenesis, at first sight, seems rather startling; but the more one considers it, the more one feels convinced that it points to the right direction for solving the problems of which it treats. It also seems capable of explaining the difficulties of Mr. Mill's theory. It being granted that the mental faculties depend upon the brain, and that the brain-cells may give off

* Mill upon Hamilton, pp. 212 and 213.

self-propagating gemmules indefinitely, everything becomes plain. In contemplating a beautiful landscape, or listening to a strain of music, the mind becomes cognisant of the landscape or music by means of brain-cells arranged in an appropriate manner. In after times, when we recollect the landscape or music, the mind recognises it by means of cells bearing an hereditary resemblance, in arrangement and form, to the original cells which gave the first impression; hence the possibility of representing to the mind the landscape or music when they are not present. This hereditary likeness is supposed to be caused by the gemmules which the original cells give off, in greater or less number, according as the impression is greater or less; while the gemmules remain dormant, the landscape or music is forgotten; but when they meet with the partially developed cells, or gemmules which precede them in the regular order of growth, they become developed, and the landscape or music is recalled to mind; in other words, when one thinks of something which puts one in mind of the landscape or music, the cells which cause that thought are the cells which immediately precede the gemmules of the original cells in the order of growth, and are those with which the latter have affinity. This explains why, when we try to think of something we have forgotten, and which we wish particularly to remember, we are obliged to do it indirectly, and must go through a long and tedious process, thinking of everything which has the remotest bearing on the subject, until, at last, we think of something which recalls to mind the thing sought for. In this case, while one group of cells after another grow to maturity and die off, as one thought after another passes through the brain, the gemmules in question lie dormant because the cells which precede them in the proper order of growth have not yet appeared; but, as soon as the group of cells arises which cause that something to be thought of which recalls the thing sought for, then the gemmules find their affinities, grow to maturity in their turn, and the remembrance sought for is complete. This process occurs successively for each thought as it arises during the whole series.

Things are forgotten on the supposition that the mind cannot recognise the gemmules until they arrive at the proper size, and become units. If memory depended on direct descent of units from each other, growing to full size by self-division or budding,

nothing would ever be forgotten. It might be objected that, if these gemmules were like those of Mr. Darwin, children ought to recollect what occurred to their parents; but these gemmules must be supposed to have a different nature from those of Pangenesis, which are assumed to have an affinity for the generative organs, and to be principally collected in the zoosperms and ova. The gemmules which cause memory are much more perishable, and have affinity only for the units of the brain substance; they are more perishable, inasmuch as one forgets most of the things which happen, and remembers only the most prominent events. Moreover, I think that they are derived more from groups of units than from single ones, as one generally forgets details—as, for instance, in reading a book, one remembers only the general tenour of the argument, forgetting the words. If the attention is very little excited, the gemmules are very small in number, and soon perish, their ancestral cells having small vitality or too short existence to give origin to them; in this case, the thing is irretrievably forgotten. On the other hand, the gemmules may lie dormant for years, simply propagating themselves as gemmules until the proper units appear, causing them to grow to maturity, and then the picture of some long past event comes before one without any apparent cause. This may occur in revisiting places; and very often in fevers, when these hidden away gemmules are most likely to find their affinities, the wild thoughts coursing through the brain presenting every possible combination of units, so that, if there are any gemmules in existence, they are almost sure to meet with cells preceding them in the regular order of growth. This hypothesis explains also the fact that very old people remember better the events of their youth than the events of yesterday, for the brain-units participate in the general decline of vigour in the units of all the rest of the body; but, in youth, when all the ideas are fresh and vigorous, the brain-units give off gemmules endowed with great vitality, which may enable them to survive the weaker ones given off at a more recent period.

Memory can be cultivated; for the more the attention is fixed on any matter, and the more it is thought over, the greater number of units are engaged in it—perhaps, several generations, propagated by cell-division or otherwise, each generation giving off its gemmules—so that there would be a much greater chance

of their surviving, and finding units to which they would have affinity. In learning their lessons, schoolboys have a habit of saying them aloud; in this way, the brain receives a greater number of impressions: not only the units connected with the organ of sight, but also those of hearing and motion, are called into action, and a greater number of units give off a greater number of gemmules, and the lesson is consequently remembered better than if only those of one organ were engaged.

The brain, then, on this hypothesis, consists not only of the cells of ganglia, or grey substance, together with connecting fibres, but also of gemmules, or extremely minute particles of germinal matter, derived from previously existing cells, scattered throughout the brain, which have an affinity for cells descending from ancestors, whose position in the brain was immediately contiguous in time and space to those from which they themselves are derived.

ART. IV.—MYTHOLOGY AND RELIGION.*

THE appearance of Mr. Cox's work forms an epoch in the development of the Science of Religion. With infinite labour, the author has brought together the myths and popular tales of the Indo-European peoples; and, by application of the principles of comparative philology, has shown, not only that they embody the same ideas, but also that these ideas have a purely physical basis. This was, of course, not possible without frequent reference to the labours of other writers; but Mr. Cox has availed himself of their researches in no servile spirit. The result is, unquestionably, a great triumph for the comparative philologists, although whether their method alone is sufficient to explain the source of Aryan mythology is open to doubt. This we will consider, after we have described the system which Mr.

* *The Mythology of the Aryan Nations.* By George W. Cox, M.A. 2 vols. London: Longman, Green, and Co. 1870.

The Origin and Development of Religious Belief. By S. Baring-Gould, M.A. Part I.—Heathenism and Mosaism. Rivingtons: 1869.

"Lectures on the Science of Religion", by Professor Max Müller (*Fraser's Magazine* for April, May, June, July, 1870).

Cox and his fellow-workers have sought to establish, and we will then point out what was doubtless the origin of the religious idea itself.

At the foundation of all Aryan mythology, says Mr. Cox, is a belief in "a living Power, to whom men stand in the relation of children to a father." This faith gives itself utterance, as shown by the Vedic as well as the Homeric poems, "in names denoting purely sensuous objects, and thus furnishing the germ of a sensuous mythology." Primitive man did not distinguish between consciousness and personality; and, knowing nothing of the conditions of life, he invested all things on earth or in the heavens "with the same vague idea of existence. The sun, the moon, the stars, the ground on which he trod, the clouds, storms, and lightning, were all living beings." They were, by an inevitable necessity of language, conscious beings also, and thus "there would be no bare recurrence of days and seasons, but each morning the dawn would drive her bright flocks to the blue pastures of heaven before the birth of the lord of day from the toiling womb of night. Round the living progress of the newborn sun there would be grouped a lavish imagery, expressive of the most intense sympathy with what we term the operation of material forces, and not less expressive of the utter absence of even the faintest knowledge. Life would be an alternation of joy and sorrow, of terror and relief; for every evening the dawn would return leading her bright flocks, and the short-living sun would die."

The *primary* source of myths is to be found in the "spontaneous utterances of thoughts awakened by outward phenomena". These expressions would vary with the ever-varying aspects of Nature; and, when men had forgotten their exact meaning, "old epithets would become the names of new beings, and the legends so formed would constitute the class of *secondary* myths." The most fruitful source of mythical phrases would be found in the daily or yearly course of the sun, the child of night, or darkness and the bridegroom of the dawn, which "came before he was born, and died as he rose in the heavens." Thus, the sun is said to have "strangled the serpents of the night;he had to do battle with clouds and storms. Sometimes he looked benignly on the face of his mother or his bride, who come to greet him at his journey's end. Sometimes he was the lord of heaven

and of light, irresistible in his divine strength ; sometimes he toiled for others, not for himself, in a hard, unwilling servitude. His light and heat might give life or destroy it.... He might be the child destined to slay his parents, or to be united at the last in an unspeakable peace to the bright dawn, who for brief space had gladdened his path in the morning. He might be the friend of the children of men, the remorseless foe of those powers of darkness who had stolen away his bride. He might be a warrior whose eye strikes terror into his enemies, or a wise chieftain skilled in deep and hidden knowledge. Sometimes he might appear as a glorious being doomed to an early death, which no power could avert or delay. Sometimes grievous hardships and desperate conflicts might be followed by a longer season of serene repose..... He would have many brides in many lands, and his offspring would assume aspects beautiful, strange, or horrible..... He might be the destroyer of all whom he loved ; he might slay the dawn with his kindling rays ; he might scorch the fruits who were his children ; he might woo the deep blue sky, the bride of heaven itself, and an inevitable doom might bind his limbs on the blazing wheel for ever and ever."

From the fact that most of the incidents mentioned in this and analogous Hellenic stories are common to the solar myths of different Aryan peoples, the conclusion is drawn that the germ of these myths must have been known to the different members of the Aryan family while they were still united. There were undoubtedly certain differences in the development of the myth ; but these may be accounted for by the difference in character of the people themselves, and by the varying conditions of Nature by which they were surrounded and influenced. Those phenomena which are the most striking in their contrasts would more especially influence the developments of the common myth ; and thus, although the mythologies of both the north and the south may be traced chiefly to names which have been grouped around the sun ; that of the Greeks has been founded on the recurrence of day and night, while the Scandinavian and Teutonic myths refer to the alternation of summer and winter. The phenomena connected with the changes of the year have, however, affected to some extent even Hellenic mythology. Thus, "the utter barrenness of the earth, so long as the wrath of D  m  t  r lasts,

answers to the locking-up of the treasures in Teutonic folk-lore; but the awakening of spring may be said to be the result of the return, not only of the maiden from the underworld, but of the sun from the far-off regions to which he had departed." This is the idea expressed also in the legend of Dionysos, who answers to Persephonê herself, Dionysos being sometimes called the son of Dêmêtêr.

To find the key to these mythologies, we must, however, go to the Vedic hymns of the Hindus. Here the divine personalities of the Greek and Norse legends still retain their character as natural phenomena. This can be said of none more certainly than of the heroes who are described as taking part in the struggle on the plain of Ilion. The story of this struggle is, in fact, as Professor Müller says, nothing but a mythical narrative of "the daily siege of the East by the solar powers, that every evening are robbed of their brightest treasures in the West." Mr. Cox's refutation of the arguments of those who seek historical incidents in this narrative is complete; and he shows that the admission, that the writers of the *Iliad* "worked on some materials provided by ancient tradition", must lead to the conclusion he enforces. "The earliest mythical phrases", says Mr. Cox, "tell us of a hero whose chariot is drawn by undying horses, and who is armed with an unerring spear; who is doomed to toil for beings meaner than himself, or to die an early death after fighting in a quarrel which is not his own; who must be parted from the woman to whom he has given his heart, to be united to her again only when his days are drawing to an end; in whom may be seen strange alternations of energy and inaction, of vindictiveness and generosity; who, after a long struggle, and just when he seemed to be finally conquered, scatters his enemies on every side, and sinks, when the battle is ended, into a serene and deep repose. The outline is but vague; but it involves all the essential features in the careers of Achilles and Odysseus, of Meleagros and Herakles, of Perseus, Theseus, and Bellerophôn; and not only of these, but of the great heroes of the lays of the Volungs and the Nibelungs, of the romance of Arthur, and the epic of Firdusi. In some cases the very names are the same, as well as the incidents; in others they translate each other. There is thus the closest parallelism between the great epics of

the Hellenic and Teutonic tribes, of the Persians and the Hindus; and thus, also, the narrative of the Trojan war is not only divested of all local historical character, but finds its place as one among the many versions of the tale which relates the career of the great mythical heroes of all lands."

The conclusion thus drawn as to the origin of the mythology of Aryan peoples is confirmed by a consideration of their popular stories, the examination and comparison of which forms one of the most valuable parts of Mr. Cox's work, as it will be the most interesting to the general reader. We have not space to dwell on these further than to point out the importance of the identification of the Master Thief with Hermes, the wind-god of so many legends.

There are, however, several points in which we think Mr. Cox, in common with other comparative philologists, fails in his treatment of Aryan mythology. In the first place, a sufficient distinction is not made between the sun in its totality and its several attributes, as the source of myth. This defect is of the more importance since it is closely related to another question, which we think Mr. Cox has very imperfectly considered. We refer to the connection between the Aryan deities and those of other races. That such a connection exists we are reminded by occasional references in the present work; but it is of a much more fundamental character than Mr. Cox appears willing to allow. He could not, however, well do otherwise consistently with the view he takes as to the primitive nature of the condition of mind exhibited by the Vedic poems. He says that the analysis of Aryan mythology leads us back to what would seem to be the earliest condition of the human mind—that in which no distinction is made between consciousness and personality, resulting in the attribution of consciousness without personality to all outward objects, and afterwards in the formation of either an anthropomorphous polytheism, or a degrading fetish worship—the belief "in a malignant yet unconscious and non-sentient power residing in stones and rocks."

This view is founded on a total misconception of the original condition of the human mind. It is quite true that the primitive mind makes no distinction between consciousness and personality; but, instead of the latter being merged in the

former, as Mr. Cox suggests, it is just the reverse. The savage, owing to the supremacy of will over reflection, intensely personifies ; and, although all the predicative words he uses may be the expression of general ideas, yet they are seldom employed except with a concrete application. The condition of mind to which Mr. Cox traces the beginning of Aryan mythology, and in which man is conscious of his own existence, is of a much later date. Consciousness of one's own existence requires thought, not merely of self, but of self in a certain external relation, and the idea of such a relation cannot be formed without considerable antecedent mental culture. The condition of mind, then, which Mr. Cox ascribes to primitive man was really only that of the early Aryans, and it implies a long preceding state of development.

This view is confirmed, and, indeed, required, by the fact, which appears to us to be indisputable, that much of what Mr. Cox calls Aryan mythology is so only in the sense of having received a new form by the activity of Aryan thought. It is not at all impossible to derive many of the Hellenic deities from a non-Aryan source without at all interfering with their physical origin. Thus, Herakles, whatever may be said of Hercules, was undoubtedly none other than the Syrian Sun-god Melkarth, and, as such, one of the primeval Phœnician deities. So also, although the Greek Apollo was probably an Hellenic creation, yet he was really derived from Helios (Sûrya), and may be traced to a Phœnician or Chaldean original. The same may be said of Athênê and of other deities, male and female.

That the Aryans themselves originated the ideas connected with the daily course of the sun-god is very improbable. They may, however, have transferred them from another object, and a consideration of the name *Aryan* may throw much light on the question thus raised. This name we have little doubt, notwithstanding the other meanings given to it, is closely connected with that of the Grecian God of War, *Ares* (Mars). This, Mr. Cox refers to a root denoting "crushing"; but it is, rather, derived from the Semitic word *Ar*, fire, from which the lion, as the symbol of the Sun-god, was called *ari*, as seen in the word *Ari-el*, "the lion of God." In Sûrya (Helios), the Sun-god of the Vedas, as also in Arya-man (Ahriman) we have doubtless the same root, and the Aryans may be said, therefore, to be sun-

worshippers *par excellence*.* It is, of course, possible that they were not the originators of this worship, but only the first to give the sun the most prominent position in the circle of the gods. However this may be, the incidents of the career of the later sun-gods were undoubtedly known to the Chaldeans and Phœnicians, while early Hebrew history has a very suspicious similarity in many of its incidents to the mythical history of the solar deities. With the prominence given to the sun, there was, no doubt, also a change of epithets; but some other more distinctive feature than this must be sought for Aryan mythology. We shall not be far wrong if we say that this consisted in the deification of the light of the sun as distinguished from its heat—destroying and fecundating—and from the physical solar orb itself. We have not space to develop this idea; but we may point out that the idea of *light* is at the root of most of the Aryan deified aspects of nature. Thus it is with Dyaus, the glistening ether; with Varuna, the veiling heaven; with Mitra and Indra, gods of the bright sky. The same idea found its embodiment in the dawn-goddess, who, under her many names, and with her varying attributes, occupied so important a position in Aryan mythology. The most important development, however, presented by this mythology was the attribution of intellectual *wisdom* as the highest faculty of its leading divinities. Mr. Cox refers to this attribution of wisdom; but he has either lost sight of its importance, or he has wrongly thought that it was not within the direct scope of his argument. It is, in fact, impossible to understand aright the religious phenomena exhibited by ancient Aryan peoples without taking into consideration the influence of the idea of wisdom over their mythologies. It entered largely into the spiritual struggle between light and darkness which was embodied in the religion of Zoroaster, and which Mr. Cox has very inadequately treated within the limits of five pages. Through the Persian cult, it may be traced up even into Christianity itself, in the *logos* of which we have a reproduction of the creative word of Ormuzd.

The defects in Mr. Cox's work may be referred to two causes, the most practical of these being a want of appreciation of the

* Mr. Cox tells us that Savitar (a name for the sun) is represented as irresistible, and that the verse which is regarded as the holiest in the Veda is addressed to him (vol. I, p. 385).

results of historical inquiry, especially those founded on the study of ancient monuments relating to mythology—a defect which is common to comparative philologists who deal with mythological questions. Another cause which much diminishes the scientific value of their labours is the notion they entertain that religion is founded on a primitive idea of a Supreme God. It is this notion, apparently, which leads Mr. Cox to say that “the first condition of thought, which regarded every object in creation, would have *in itself* only two possible developments”—an anthropomorphous polytheism or a degrading fetish worship—and which Professor Max Müller expresses when he refers to the African faith, “with its strange worship of snakes and ancestors, its vague hope of a future life, and its not altogether faded reminiscence of a Supreme God, the Father of the black as well as of the white man.” It is somewhat strange that, considering the fundamental importance of this supposed primitive belief in a great Father God, the source of it is not shown.

Fortunately, we are able, by reference to Mr. Baring-Gould’s work, which deals directly with this question, to ascertain the philosophical ground on which such a primitive belief is supposed to have existed. On consulting this work, we find that man has two principal instincts—“the craving to find a cause for every effect, and the prosecution of an ideal of perfection.” In pursuance of the first, when he sees certain natural phenomena which he cannot explain by visible agency, he refers it to “a force outside of himself similar to that working within him.” Here is the origin of the idea of God—“of God, whether many, inhabiting each brook, and plant, and breeze, and planet, or as being a world-soul, or as a supreme cause, the Creator and sustainer of the universe.” This, however, is not sufficient. Man has a craving for something beyond mere sensual pleasure; and he forms an ideal, after which he continually presses in pursuance of an instinct leading him to a “distant perfection”. Thus, man’s “idea of causation has led his intelligence to the conception of a final cause, which he calls God. Naturally his ideal adheres to this intellectual concept, and in the final cause he seeks to focus all his conceptions of perfection; and thus God comes to be regarded as all-mighty, all-wise, the perfection of justice, of goodness, and of beauty.”

Primeval man, however, "saw confusedly piled up above him an awful Power, terrible in its might, vague in outline, and mysterious in its nature", from which he formed his earliest notion of God.

This view of the origin of the idea of God is perfectly consistent with the physical explanation of mythology. But it is not satisfactory. Let it be granted that all savages have formed a conception of some mighty being who causes the more dreaded phenomena of nature. Yet nothing is more certain than that this conception is utterly inoperative as the foundation of the religious idea. These phenomena are too transient, or recur too seldom, to lead to the formation of any such idea in the mind of man. The evils which most powerfully affect the savage are those connected with everyday life and cares, and the sickness and death of which he is continually reminded on each hand, and they are referred simply to the agency of unfriendly demons, by whom the savage believes himself to be surrounded. In this fact, we see the weakness of the very first principle laid down by Mr. Baring-Gould. Whatever man may be when civilised, in his savage state he has no "craving to find a cause for every effect." Undoubtedly, when any phenomenon particularly strikes him by its strangeness, he refers it to the operation of a spirit agency; but this is merely because, in his ignorance, everything which is mysterious is so referred. Whence, then, the origin of this idea of spirit agency? It is simply the result of the belief in the continued existence of the spirits of the dead—not dead to the savage, but still living—and whom he sees operating in everything which surprises or injures him in his daily life. So far from recognising God in these phenomena, he sees only the activity of man, real although unseen, and this fact is sufficient to show that there can be no question here of an ideal of perfection.

The explanation given by this theory of the origin of special forms of religious worship, such as that of the planetary cult, cannot be otherwise than unsatisfactory. The assertion that, like the evil animals he could not master, "sun, moon, and stars were also invested by man with a life and knowledge like his own," really explains nothing. The case is made worse when it is said that nature-worship is "the concentration of force in material objects"—thus resolving this phase of

religion into fetishism, which is defined as "a concentration of spirit, or deity, upon one point." Mr. Baring Gould is at least consistent. With him fetishism is not limited to any form of superstition or religion. Nor could it be, since he sees in it only the localisation of divine force. Hence, "every temple and shrine and priest is a recognition of fetishism." Planetary worship was, certainly, in some sense, fetishic, but this is no explanation of its origin. Nor is the origin of the monotheistic belief accounted for when it is said to have resulted from the attribution of "the impress on Nature to a Divine power, unfettered by matter, and uninvolved in it." However true this may be as an explanation of the *nature* of the belief, it does not throw any light on the question of its origin. Nor is any real advance made by calling in the assistance of the ideas of unity, of the infinity of space and time, or of the continuity of substance, spiritual or material. It is not too much to say that these ideas could not be entertained until the germ of monotheism was formed.

That the Hebrews had, up to the time of the later captivity, any such monotheistic idea as that supposed by Mr. Baring-Gould we do not believe. But even if it were otherwise, the view which he takes of the relation of God to nature requires that he should discard *monotheism*, since, although it "provides morality with a strong and stable foothold," yet it has a tendency "to narrow the mind, destroy sympathy, and arouse intolerance." Nor is *pantheism* more satisfactory, since on this, we are told, no system of ethics can be based. Mr. Baring-Gould, therefore, calls in the aid of materialism, and he says: "Pantheism gives us an absolute God, anthropomorphism gives us a personal God, materialism supplies a link of cohesion. Fuse the ideas, absorb materialism in pantheism, and pantheism in materialism, the result is what I call *phusitheism*." According to this view, "God is present in every force of nature—in heat, electricity, magnetism, attraction, gravitation. It is not that heat, electricity, etc., are God, but that light, heat, electricity, etc., are the effects of the presence of God—effects of His action on the bodies He has given us." God, then, is the spirit of the material universe, but not the universe itself, which was created by Him, and from which He is independent, because pre-existing and purely spiritual in his nature. This is certainly an ingenious mode of getting rid of many

of the difficulties attendant on the ordinary orthodox notion of the relation of God to nature. Unless we are much mistaken, Mr. Baring-Gould has expressed very nearly the idea of that relation entertained by such writers as Professor Max Müller and Mr. Cox. It is not very satisfactory, however, from the scientific standpoint, since the very notion of creation, which is essential to it, cannot be proved to have any real foundation, and because, moreover, the origin assigned for the religious idea is, as we have seen, far from being sufficient.

What, then, is the true genesis of the religious idea, that which ends in the recognition of a Supreme Deity? This idea is, undoubtedly, founded in *Spiritism*, that is, in the belief in the existence of spirits, who are thought to busy themselves with the affairs of men, and whose action is seen in many of the phenomena of external nature. The savage does not, however, refer these phenomena to an activity merely *like* his own. To him there is no such thing as death. The body may decay, but the man still lives, and for some time at least after death he is supposed to require the ordinary provision of the living. Mr. Baring-Gould has well shown this, and we are surprised that he has not seen the consequences to which it necessarily leads. The non-observance of the rights of the dead is supposed to be resented by them; and in this we have the foundation of the notion entertained by savage man that he is surrounded by spirits who seek to injure him. The most essential duty which the survivors owe to the departed is *burial*, and hence the unburied dead are the demons whom the savage chiefly fears. To these, however, are added the spirits of enemies, who are supposed to retaliate even after death for the injuries they have sustained during life. It is evident what an extension this belief may have. Even the buried dead require provision for a certain time after death. This provision is supposed to keep them from interfering with the living, and there would be little difficulty in extending the idea, so as to see in similar offerings a means of propitiating the demons who are thought to be unfriendly, and even of obtaining their friendship and assistance. This is the real explanation of fetishism and idol-worship. The fetish or the idol is not, as Mr. Baring-Gould imagines, the point of concentration of the divine force, but simply the object in which the demon is thought to become located more or less permanently.

We have here the explanation of one phase of spiritism—that which is sometimes called the worship of devils. There is, however, another phase which has often come to be associated with it, and which has had a very important independent development. When man has made certain progress in mental culture, his remembrance of the dead ceases to be one only of fear. The reverence with which the head of the family is viewed during life continues after his death, giving rise to what is termed *ancestor-worship*. This phase of spiritism may have a still further development. The chief occupies the same position towards the tribe as the father does towards the family. Hence the ancestor of the chief becomes the protecting spirit of the tribe, and at a later stage he may be the national god.

The source of the reverence which semi-civilised peoples exhibit for the head of the family is his procreating power; and we cannot therefore be surprised that, to those who believe the denizens of the spirit-world to have the power of giving the good things of life and that a numerous progeny is the best of all gifts, the representation of the generative instrument may become a powerful fetish. This is the origin of the phallic superstition, which is thus seen to combine both of the early phases of spiritism.

We have another point of contact between these forms of spiritism in serpent worship. Under certain conditions, wild animals may come to be considered as being under the power of spirits, if not themselves incarnate demons. Of these animals, those noted for their subtlety are often thought to be the embodiments of spirit-ancestors. The serpent is thus treated, and hence it has become almost everywhere the symbol of life and healing, and of wisdom as representing the spirit-world. There can be no wonder that, although not itself directly a symbol of generation, it came to be associated with the worship of those spirits who are thought especially to preside over human fecundity. The phallic superstition itself, however, had a special development such as that which ancestor-worship underwent. The spirit who was supposed to reside in the local phallic emblem became the guardian of the tribe, and when the power of the tribe was extended over a whole country, it would become the national deity presiding over generation. This would be still more likely to ensue when man began to consider his relation to nature in general, and when he saw in the planets the arbiters of human destiny. Rulers over

all men, they became in some sense universal deities; and Saturn, as the highest and the most distant of the known planets, was thought to be the especial guardian and controller of human fecundity. Hence the upright phallic figure and the serpent came to be the emblems of Saturn, the erect god, who was received by most of the peoples of antiquity as the supreme deity. The phallic pillar-gods had many developments, but the most important was certainly that which is known as Semitic monotheism. This was nothing but the recognition of the national god as the *father* of the people; and it originated purely in the idea of a generative deity, who, at first the all-embracing Saturn, afterwards became the Sun-god.

By the side of this superstition was springing up another phase of what may be called *phallism*. When man came to cultivate the ground, he saw that he was dependent on the orderly changes of the seasons for a return to his labour. The extreme value, too, as means of subsistence, of the buffalo and the goat, the first domestic animals, led to their being considered as typical of the fecundity of nature. Hence, when on the development of agriculture, the course of the great luminary through the heavens was mapped out, these animals took the chief places among the signs of the zodiac, and ultimately became the incarnation, in Egypt at least, of the supreme god of nature. The moon appears at first to have occupied this position, although there is no doubt that the sun ultimately took the place of both the moon and Saturn as the great lord of fecundity. Thus the phallic idea was at the foundation of the planetary cult of all the peoples of antiquity. This was, however, only a phase of spiritism, and it almost necessarily led to the establishment of the religious mysteries in which the passage from death to life was represented.

Even in the most spiritualised form taken by the doctrines taught in the mysteries, and which fully recognised the sun-god as the source of life, there is no trace of monotheism. They enforced rather a triad of divinities, founded on the three orders of time, with a duality of principles; and it was only when the quasi-monotheism of the early Hebrews was brought into contact with Persian thought that the former was resolved into the purer monotheism of the later Hebrew prophets. All the ideas of divinity embraced by these religions are thus traceable to the

fecundating power of the sun. To the Aryan mind, however, which, moreover, deified almost every phase of nature, other attributes were more striking, especially that of *light*, from which arose the further idea of intellectual wisdom. It was this which gave its special tone to the religious system of Zoroaster and to the teachings of Gautama, who, without abandoning Hinduism, sought to attain happiness in a future state by adherence in the conduct of life to the simple dictates of conscience guided by reason. Finally, Christianity, by appropriating the sublimest precepts, with many of the dogmas, of its predecessors, showed its connection with the earlier cults, while establishing its claim to be the universal religion and holding up Christ, as already was Mithra in the Persian faith, for the guidance and pattern of mankind. This is the conclusion reached in the course of the actual development of the religious idea. In Mr. Baring-Gould's philosophic system the divine pattern furnished by Mithra or Christ becomes the ideal of perfection necessary to the proper development of man's nature, and which is found not only in Christ, the divine incarnation of male perfection and the great Exemplar for man, but in Mary, who furnishes the model required by woman.

The final result to be considered must necessarily be the same in whatever way religious phenomena are explained, seeing that this result is furnished by the existence of such phenomena. The difference must therefore be in the principle applied for their explanation; this, in the hypothesis of Mr. Baring-Gould, being the primitive belief in the existence of a Supreme Being, whereas the theory we have advanced requires only the belief in the continued existence of the human spirit, notwithstanding apparent death. It may be thought that so long as the final state of belief is the same, it does not matter from what source this belief has been derived. Practically, and with relation to the conduct of life, it does not; but it is far otherwise when the relation of man to God is considered. We have a proof of this in Mr. Baring-Gould's philosophy, which requires for its starting-point the idea of creation, an idea which is utterly repugnant to the natural hypothesis above stated. The religious idea is strictly the result of a process of intellectual development, and there is no ground for supposing that man himself, or the world of which he forms a part, has originated by any but an analo-

gous process. On the hypothesis of creation there is no absolute guarantee that the results of a religious development, such as that supposed by Mr. Baring-Gould, are the expression of truth. The very fact, however, of certain ideas being arrived at in the course of the orderly evolution of the human mind is positive proof of their relative truth. We say relative, since it is probably impossible, with our present experience, to arrive at positive truth as to the nature of God or man's relation to Him. According to this view, every fresh advance made by the human mind in this direction is a step further towards positive truth. It is the spirit, however, and not the letter of the new teaching which is entitled to be thus considered; since the human mind has an unhappy tendency to embody its religious ideas in intellectual dogmas, which, from the very nature of the case, must be false. We have an example of this in the idea of incarnation, which it has been Mr. Baring-Gould's object to develop. As stated by him, this constitutes a great advance in Christian belief, but in reality it only points to the still more developed notion that not only Christ, but mankind also, is a divine incarnation, that is, an evolutionary product of the divine energy.

Our task is completed, and it remains for us only to give our general estimate of the books which have called forth these remarks. Judged either together or separately, we think that they must be considered as constituting most important signs of the times. Mr. Baring-Gould's work is in some sense more important than its companion. It exhibits the phenomenon of a clergyman of the Church of England seeking to establish a philosophy of religious belief without calling in the aid of revelation, and founded on the idea of the moral capacity of man's nature, instead of its innate corruption. The possibility of doing this is the legitimate conclusion to which a rational view of the Christian doctrine of Divine incarnation must lead; and its enunciation is too hopeful a sign of mental activity and intellectual advance not to be received with satisfaction, notwithstanding the defects which, as a philosophic system, it must exhibit.

Mr. Cox's work, although its fundamental notion as to the source of the religious idea may be incorrect, yet perfectly establishes the nature of the marvellous system known as Aryan Mythology, and hence throws great light on ancient religious

belief in general. For this reason, if for no other, it is deserving of most careful study, and it will undoubtedly occupy a foremost place among the works relating to mythology and religion.

ART. V.—PREHISTORIC ARCHÆOLOGY.*

THE city of Salisbury has long enjoyed a high degree of historical and ecclesiastical renown; and its spire has, from its antiquity and its exquisite architectural proportions, been able to hold its exalted head above most other like structures. An additional archæological glory is now conferred upon this city by the acquisition of a Museum, which has been established, and is there maintained, by the liberality of Mr. William Blackmore, of Liverpool and London. Placed in a district abounding in traces of peoples long since passed away, and of whom no authentic record has been left, Salisbury is the fitting metropolis of Prehistoric Archæology. The plains of Wiltshire and the hills of Dorsetshire are studded with tumuli, holding beneath them the evidences of the amount of civilisation to which the vanished races had attained. Over and above this special local interest, the Blackmore Museum has been endowed, by its public-spirited founder, with the valuable collection of American antiquities made by Messrs. Squier and Davis, in their exploration of tumuli and mounds in the valleys of the Mississippi and Ohio.

Of the objects thus brought together from all parts of the world, *Flint Chips* is a catalogue—and something more, the several series of objects enumerated therein being accompanied by a context presenting a full account of the literature of these monuments of prehistoric Man. That this has been no light task may be inferred from the fact that the contents of the Blackmore Museum occupy two hundred and fourteen cases, arranged in four groups. These groups are:

1. Remains of animals found associated with man.
2. Implements of stone.
3. Implements of bronze.
4. Implements, weapons, and ornaments of modern savages,

* *Flint Chips*. By Edward F. Stevens. 8vo. Pp. 593. London: 1870.

which serve to throw light upon the use of similar objects belonging to prehistoric times.

These several groups are again discussed by the author under the following divisions: viz., Drift Series; Cave Series; Palæolithic and Neolithic Periods of the Stone Age; Lake Dwellings; Shell Mounds; Tumuli.

The explanatory context by which Mr. Stevens has connected the whole series possesses independent importance beyond its relation to the groups of objects of which it treats. It is compiled from the latest and most trustworthy authorities; and so extended has been the author's research among books having any reference to his subjects, that his pages may be said to bristle with references.

Mr. Stevens will find among his readers a cordial acceptance of his statement, that he has "endeavoured to make *Flint Chips* a record of facts rather than an exposition of speculative theories." Not that he would have us to suppose that he has formed for himself no definite general views upon the subject of Prehistoric Archæology. The one guiding idea that pervades this collection is *progress*. To illustrate the various steps in the progress of races, from the most barbarous state of man's existence; to show that through the special forms of weapons and implements invented by savage tribes there has been evinced "a condition not so much of degradation as of arrested or retarded *progress*, and to see that, notwithstanding many halts and relapses, and a very varied rate of movement in different races, the march of human intellect has been always onward"—is the principle held in view by the founder. In developing his views, Mr. Blackmore has been most ably seconded by the Curator of the museum, the author of the work before us. With reference to the progressive improvement in the inventive skill of races, as afforded by the discoveries of prehistoric implements, the author appropriately quotes the following from Mr. John Evans:—"Any one comparing the exquisitely made axe-hammers and delicately chipped flint arrow-heads of the Bronze age with the rude implements of the Palæolithic period, cannot but perceive the advance that had been made in skill and adaptation of means to end" (p. xiii).

It is well shown by the author, and the point is well worthy the attentive consideration of those who are disposed to under-

rate the ancient date of the flint implements, that "evidence of progress in prehistoric times is not limited to the improvement shown in the manufacture of implements; it extends also to the indications afforded by these objects, the introduction of new habits of life; such, for instance, as the practice of agriculture and the use of cereals for food." With the discovery of the use of grain as food, and the consequent introduction of agriculture, a total change from the unsettled nomad life would follow, with its inevitable subdivision of labour, the pursuits of commerce, and an advance in civilisation. This gradual progress, Mr. Stevens (as already observed) follows up in the arrangement of the museum at Salisbury, and in his instructive exposition of the series of objects therein.

In his chapter on the Mammalian Remains, Mr. Stevens has brought together a mass of extremely interesting facts and inferences bearing upon the natural history of prehistoric times, and, to use a paradox, giving us an historical sketch of the aspect of things of which no history has been preserved. The bones and teeth that are scattered in the drift, with their altered chemical composition—all trace of gelatine having disappeared—speak to the lapse of time since they were deposited where they are found; and demonstrate a state of climate differing from the present, and a fauna, in like manner, different, but correspondent to their surrounding conditions. Thus, "the musk-sheep, reindeer, lemmings, pouched marmot, mammoth, and woolly rhinoceros, are all animals peculiarly adapted for living in an arctic climate. Our downs were tenanted by vast droves of rather small, but hardy, horses, not unlike the half-wild forest ponies of the present day, by large herds of deer, and shaggy-maned bisons. The stillness of the night, we may believe, was not unfrequently broken by the terror inspiring roar of a hungry lion, or, perchance, by the howling of a pack of wolves, or the hideous discord of the savage hyænas quarrelling over some half-putrid carcase of a young rhinoceros, making the air re-echo with their peculiar yells—that strange, half-human expression of savageness and mirth" (p. 13).

The following extract furnishes, to our apprehension, a more striking illustration of Darwin's law of natural selection than of the *à priori* doctrine it enunciates:—"In examining the bones at Fisherton, one has been forcibly struck with the fact, that the

same divine and beneficent law which at the present day prevents the injurious increase of any one race obtained also at the remote period now under consideration. The too rapid extension of the *herbivora*, or vegetable feeders, was kept within proper limits by the presence of the very formidable *carnivora*, or flesh-eaters. Nor was this all; for it will be seen that amongst the former the great bulk of the bones belong either to the very young or very old individuals: in both cases indicating that it was the weak, the sickly, and comparatively useless members that were sacrificed for the benefit of the strong and healthy" (p. 14). It admits of no dispute, after the conclusive demonstration of Mr. Darwin, that it is a law of nature that the weak must go to the wall; but the *à priori* argument above quoted places the matter in a somewhat different light. It was, we have heard, no less an authority than Coleridge, who argued, on *à priori* grounds, that the final cause of the nose was snuff-taking. No devout mind will deny that the laws of nature are of divine origin; but we do not see the work of a beneficent divinity in the creation of one race simply to be destroyed by another. The notion is plainly human, not divine.

An interesting and more logical inference is that from the fact that, in the reindeer-horns disinterred, the same proportion is observable as in the present day—viz., four or five shed antlers to every pair found attached to the skull—affording an argument that the animals have lived and died where now we find their fossilised remains (p. 17). In like manner, the old teeth of the mammoth that have been pushed out in the process of dentition are evidence adduced of its having lived in the immediate neighbourhood of the spot where these teeth were found.

Having at some length noticed the flint weapons and utensils of the Drift, Cave, Stone Age, Palæolithic and Neolithic Periods, the author describes the method of making flint and stone implements. On this topic, we borrow the following passage from Mr. Evans, "On the Manufacture of Stone Implements in Former Times."*

"1. That, in the Palæolithic, or River-gravel Drift Period, implements were fashioned by chipping only, and were not

* *Transactions of International Congress: Prehistoric Archæology.* P.193.

ground or polished. The material used was, moreover, as far as at present known, almost exclusively flint.

"2. That, in the Reindeer, or Cavern, Period of Central France, though grinding was not practised, yet greater skill in flaking flint, and in working up flakes into serviceable tools, was exhibited. In some places, as at Langerie, surface chipping is found on the flint arrow-heads, and recesses had been worked in other hard stones than flint, though no other stones had been used for cutting purposes.

3. That, in the Neolithic, or Surface Stone, Period of Western Europe, other materials besides flint were used for the manufacture of hatchets. Grinding on the edge and on the surface were generally practised, and the art of working flint from the edge was probably known. The stone axes, at least in Britain, were rarely perforated.

"4. That, in the Bronze Period, such stone implements as remained in use were, as a rule, highly finished, many of the axes being perforated and of graceful form, and some of the flint arrow-heads, evincing the highest degree of manual skill."

Under a heading, "Tumuli of the Old World", we have short notices of the Homeric tumuli, Scythian tumuli, and the Scandinavian tumuli, introductory to the consideration of British tumuli, so abundant in Wiltshire and adjoining counties. These have, as our readers know, been divided by Dr. Thurnam into long and round barrows. Those of the south-west of England, belonging to the Neolithic Age, according to the same authority, and to a period when burying of the dead was the generally received mode of disposing of the remains of the dead; while round barrows were formed during the period in which cremation prevailed. Of the human remains removed from these barrows it is not necessary to speak in this place, as our publications have been the medium for the conveyance of a great share of information thereon.

The Blackmore Museum possesses a large collection of objects from the lake-villages of Switzerland. With notices of these is given a summary of the information already published on these curious remains. As this, however, is compiled from the works of Sir John Lubbock, and Dr. John Lee's translation of Keller's *Lake Dwellings of Switzerland*, we need only add, that the summary will be found useful to those who have not access to the original works. A very full catalogue, both from the fauna and from the flora of the lake-dwellings, is furnished by the Salis-

bury Museum. Thus, we read of wheat, barley, millet, and burnt bread, or unleavened cake made of wheat or millet; water and marsh plants, weeds of the cornfield, beans, peas, lentils; fruits and berries, *e.g.*, apples, apple-pips, cherry-stones, raspberry and strawberry seeds, dogrose, elder, hazel-nuts, chest-nuts, beechmast; Scotch fir-cones, spruce fir, oak, yew, ash, mistletoe, juniper, birch; yellow flag, water-lily, crowfoot, pond-weed, etc., are among the objects enumerated as being found in the ruins of the pile structures.

One hundred and twenty-five illustrations accompany the author's connecting commentary. Among these we may direct attention to the representations of American stone-pipes, presenting, especially from the mounds of Ohio, some of the most curious and grotesque specimens of this art. There are pipes of the shape of various animals—*e.g.*, tortoise, serpent, frogs, birds, quadrupeds, and also heads, human and brute. Our modern manufacturers might pay a visit to Salisbury, that would, perhaps, prove profitable in the present tobacco *furor*. Some larger stone-pipes, evidently too large for common use, are termed by Dr. Davies "calumet idols". These were found in Tennessee, and were probably reserved for ceremonial purposes. The use of tobacco is said to have existed in America long before its discovery by the Spaniards; and there is no good reason for doubting the statement, since it is agreed on all hands, that it was brought into Europe from the New World, and has always been a matter of great importance with the North American Indian, the calumet, or pipe of peace, being the invariable companion of the tribe wherever it goes, in war and in peace, in hunger, in want, and in misfortune. In his oblations to the Great Spirit, the fumes of tobacco are offered as an acceptable incense. Clearly, from the discovery of the stone pipes in prehistoric mounds, the custom has an ancient date.

The scope of *Flint Chips* being such as our readers will, we trust, have gathered from the preceding imperfect abstract, the reviewer has had little more to do than to enumerate its contents. Furthermore, as the author lays no claim to originality, criticism is disarmed. We may, however, in conclusion, state our opinion, that the author has done himself scant justice in the choice of his title, since it conveys no adequate notion of either the intention or the execution of the work. From both

points of view, it must be admitted that Mr. Stevens has presented us with a veritable Guide to Prehistoric Archaeology, and as such we commend it to the study of all who are interested in the topics of which it treats; and who is not so? *Homo sum, nihil, etc.*

W. B. K.

ART. VI.—THE ANTIQUITY OF CIVILISATION.*

By J. W. JACKSON, Esq., F.A.S.L.

CIVILISATION is an important fact in the history of man, of which, perhaps, anthropology has yet scarcely taken adequate account. Our ideas on the subject are still vague, whether as to the people among whom it originated, the period when it commenced, or the races more especially susceptible to its influence. We have not yet quite outgrown the tuition of a dogmatic theology, and the absurd chronology based upon it in this matter; and, as a result, are apt to place "the beginning" at a period inadequately remote for the vast and complex developments, social, political, and intellectual, which even historic, to say nothing of pre-historic civilisation, implies. We suppose it is almost needless to say that in anything approaching a thorough investigation of such a subject, the race-question cannot be excluded. Who were the founders of civilisation? Among what people did its light first dawn, and to what division of mankind are its dominant characteristics most due? Did it originate independently, from many diverse centres, or was it, primarily, the product of one ethnic area and of one supremely-endowed race?

As yet the replies to these queries must be largely supposititious and hypothetical. History, as commonly understood, affords no light on the subject. It presents us, at its commencement, with religions, laws, languages, and even arts and sciences, implying not only one but many cycles of national progress, splendour, and decay, as the necessary accompaniments and precursors of such advanced forms of social refinement and intellectual culture. And while history thus contains internal evidence of its

* *Twelve Lectures on Primitive Civilisations.* By John P. Mahaffy, A.M. London: Longmans, Green, and Co.

merely fragmentary character and comparatively modern date, we can hardly say that philology, mythology, and archæology are quite adequate to supplement its deficiencies. These powerful instrumentalities are too recent in origin, and, as a consequence, far too germinal and imperfect to permit us to suppose that they have yet even approximately solved the great problem of "pre-historic times." They have at most only afforded us encouraging indications as to the vast possibilities of discovery and the great wealth of data, which so temptingly invite the researches of the persevering and competent student.

Notwithstanding this early stage of the inquiry, however, and the imperfect use yet made of the means at our command, some salient facts of vast importance appear to be looming into visibility, so that we can already descry the dim outline of great events, which are slowly ripening from probabilities into certainties. Among these we may say is the fact that there was a primitive, and nearly, if not absolutely, independent development of Turanian civilisation in Eastern Asia, of which we see the traditional and far-off results, and perhaps, in a measure, the fossilised forms in modern China and Japan. Judging by antiquity of race, this is probably the oldest phase of civilisation now extant, and if so, is worthy of the profoundest study, as affording us an insight into the life of a pre-Caucasian age, and the capabilities of a non-Caucasian race.

Another fact of almost equal certainty is the evolution, at a very early period, of two distinctly characterised types of Caucasian civilisation; the one a product of Semitic, and the other of Aryan influences, the former originating in the southern and the latter in the comparatively northern portion of the Old World. And here again, perhaps, we are almost justified in affirming that the Semitic, under its new name of the Cushite, was the older of the two.

Now, these leading facts are not merely matters for archæological research and the gratification of antiquarian curiosity. They are, no doubt, roots that strike down into the depths, and are almost lost in the obscurity of prehistoric ages; but they lead continuously, if not directly, up to results, that hang as ripened fruits on the living Ygdrasil branches of to-day. Nay, we do not greatly exaggerate in saying that there never was a time, in which these long-transmitted results were more vigorously ope-

rative in the way of interaction, than at the present moment. Turanian civilisation, old and effete in its spirit, corrupt in its institutions, and consequently enfeebled in power and resources, has nevertheless accumulated an enormous mass of disciplined and industrious humanity on the Asian shores of the Pacific Ocean, which, retained in practical isolation for many millenniums, is now breaking through its time-honoured barriers, and must, ere long, flood the American and Australian expanses of Aryan colonisation. While, conversely, the ideas and institutions, but more immediately the practical appliances of Aryan Europe, are inevitably revolutionising the fossilised quietude and traditional immutability of Turanian life in the farther East. Nor is this all; for Aryan Europe, with her vast colonial extensions, constituting that religious, political, social, and intellectual unity once called Christendom, has now attained to such superiority in material resources and moral influence, that the entire area of Islam simply retains its nominal independence upon sufferance. The cross dominates the crescent; and, as a result, the Semitic lands of the hither East await their inevitable conquest and colonisation by the invading Aryans of the West.

Thus, amid all the perturbations of race and oscillations of power, wherewith history and tradition have rendered us familiar, some great tidal movements of a decidedly ethnic character are clearly discernible. Perhaps we do not go too far in saying that a succession of types is distinctly observable, embracing the Turanians, the Semites, and the Aryans, whereof the last on their European area are now, as we have said, the masters of the situation, and, judging by the amount of their moral and material force, are about, if not to largely supersede their predecessors and ancient rivals, to at least baptise them with a powerful infusion of Aryan blood, and a very effective infusion of Aryan ideas and institutions. In truth, the more we study the past, the more thoroughly must we be convinced that the collective life of humanity has been continuous, and, consequently, that present conditions are a result of movements and influences, of which the record is preserved, if at all, in the faintest tradition or in some obscure myth, but which, could we recover their precise outline, might prove interesting not merely to the historian and the anthropologist, but also to the statesman and the political economist.

It is but recently that the study of primitive civilisation has become possible. Not only were the requisite data, philological and archæological, previously wanting, but there were invincible prejudices, both religious and scholastic, which utterly forbade anything approaching to a free and untrammelled investigation of remote antiquity. The groundless and now admittedly untenable chronology of Archbishop Usher rendered anything like a rational account of the rise, fall, and succession of the Egyptian, Chaldean, and Assyrian empires impossible, to say nothing of Semitic and perhaps Aryan civilisations of a still older date, the very existence of which was then unknown. Nor were the obstacles arising from a narrow scholasticism much less than those originating in a dogmatic theology. A culture that terminated with the study of classic models very naturally led to the conclusion that all true civilization began in Hellas, and that not only what was outside but also what was before Greece, and this, too, the Greece of history, must be relegated to the realm of barbarism. This restricted faith received a severe shock by the discovery of the Sanscrit language and literature, and it was still more rudely shaken by the revelations of our Egyptologists, to say nothing of additional light derived from the cuneiform inscriptions of Assyria, and the Himyaric inscriptions of Arabia. But the prejudices of centuries are not to be removed in a day. We still have histories of philosophy, biographical and otherwise, which presuppose that the entire process of Greek culture was an independent and isolated development, wherewith the schools of India and the theosophies and cosmogonies of Egypt, Chaldea, and Persia had nothing to do. So we have speculations on Greek mythology, that quite ignore all earlier Aryan data, and assume an evolution of the Olympian and pre-Olympian deities and legends as a separate and special fact in the history of humanity.

It is here that we see the educational significance, if not the historic value of the work whose title precedes this paper. Mr. Mahaffy has not added, and indeed does not profess to add, anything to our previous knowledge of remote antiquity. His book is simply a well-arranged summary of existent information respecting the subject of which he treats. He has no profound views, no vast generalisations, and no fertile suggestions for the reader already, in any measure, familiar with recent publications

and late discoveries bearing on prehistoric ages. A series of lectures to the pupils of a ladies' college was not indeed the channel through which we should expect bold views or startling originality. Such elements would have been unsuited to the place and audience, both of which demanded the certitude of ascertained knowledge rather than the daring of untried speculation; and Mr. Mahaffy has shown his good sense by confining his prelections within the limits of the former province, rather than by indulging himself, to which, on such a subject, there was a great temptation, in the more attractive and perhaps more showy liberties of the latter. Hence there are no lengthy dissertations on such disputable subjects as the Cushite origin of Egyptian and Chaldean civilisation, the pre-Aryan occupation of India by some other, and perhaps Semitic race of Caucasian conquerors, or the probability of a pre-historic cycle of Celtic civilisation in Western Europe. But in place of this we have a frank admission of the great and important discoveries of our Egyptologists, and a very fair statement of what has been learned from the cuneiform inscriptions of Assyria.

The liberality of tone, indeed, throughout the work is most commendable, and we can only hope that it is the beginning of a reform in our educational processes that will extend from history to every other department of knowledge. Hitherto a timid orthodoxy, that shrinks alike from the investigations of the archaeologist and the discoveries of the man of science, lest either should unsettle stereotyped ideas, has so far prevailed in the preparation of our school-books and the tuition of the young, that most of us have had not merely to learn, but also to unlearn much on arriving at manhood. Now it is time that this should cease, and Mr. Mahaffy's volume is a step in the right direction. Should it arrive at a second edition—and it is eminently deserving of this—and a yet greater measure of success, we would venture to suggest one or two emendations. There is, for example, an undue prominence given to the Semites, so that the young reader, familiar only with this work, would probably underestimate the part played by the Aryans in the great scheme of human progress. Again, Mr. Mahaffy speaks of the Arabs as being indubitably of *one* race, overlooking apparently the well-known distinction between the Kahtanic peoples of the South and East, and the Ishmaelitish tribes of the North and West of

the Peninsula. Again, he speaks of them as predominantly nomadic, despite all that Palgrave has told us to the contrary, and treats their claims to seamanship with something approaching to sovereign contempt, notwithstanding their piracy in modern and their maritime greatness in ancient times. These, however, are slight blemishes in a work that has the transcendent merit of attempting to rescue the rising generation from that systematic perversion of thought and knowledge, which consisted in teaching them history on the basis of Rollin, and chronology on the scheme of Usher, thus ignoring all the vast discoveries of the last forty years, and necessitating a virtual revolution in every well-informed mind as to the entire form and aspect of humanity's remoter past.

And now, in concluding a notice like the present, it may, perhaps, be as well to make a few remarks on "Primitive Civilisation" and "Prehistoric Times" from the anthropological standpoint. We suppose it is almost needless to say that the primitive condition of man was that of the savage, and that, judging by the type of all savages at the present time, his organisation must have been very rude; he would not have been fit for the savage condition if it had not been so. This initial and, if we may so phrase it, rudimentary stage of humanity appears to be still represented, though, doubtless, at many grades of removal and improvement, by two very widely diffused and contrasted types, the Negroid and Turanian, whereof the first is man on the plane of nature—perhaps, we may almost say one of the *feræ naturæ*—in the South of the Old World, while the other is almost equally man on the plane of nature in the North. Of these, the first, although he has had, from time immemorial, the larger part of a vast and fertile continent, together with several large islands, wholly to himself, has never, so far as we know, emerged into true civilisation. He has never prevailed to lodge his kings in a palace nor worship his gods in a temple, and he has never evolved even the elements of literature or science. And not only has he failed to accomplish this by his own unaided exertions, but he has also conspicuously failed to follow the example and appropriate the instruction of higher races with whom he has been in contact for at least five thousand years. It is otherwise with the Turanian; he has attained to a very marked, if not a very exalted, form of civi-

lisation, on which he has impressed his ethnic peculiarities so profoundly, that, if not absolutely his own by origin, it has, at least, become thoroughly his own by appropriation. But, while the Turanian is thus, in a measure, civilised over a portion of his area, there are large tracts where he is still a nomad, and others where he is little better than an ichthyophagous savage. Moreover, as we find inferior extensions of the African type in the Oceanic Negro, so we find a race not altogether devoid of Turanian features in the Indian of America, so that it is, perhaps, scarcely just to speak of the Turanian as a type of man prone to civilisation, or richly endowed with either the moral principles or intellectual faculties that would raise him to a distinguished position while subject to its influence.

In some obvious, though as yet imperfectly explained, relationship to these two ruder races, we find two other and higher types, known as the Semitic and the Aryan, and both commonly, though perhaps erroneously, included under the term Caucasian, meaning thereby, however, no longer any definition of their proper, that is original, ethnic area, but simply implying that they belong to the more nervous and organically developed, and, as an accompaniment, the more mentally powerful, division of humanity. Now here, again, we find that the Semites are placed mostly in the south, and the Aryans largely towards the north, of what may be defined as the present Caucasian area of the world. Is there in this geographical distribution any index as to profound ethnic relationship? What is this Caucasian type; is it not a higher, and so, on any hypothesis save the miraculous, a later type of humanity than either the Negroid or Turanian? and, if so, then must we not regard it as in some sense evolved, whether through telluric or other influences, out of one or both of these ruder races? In a former paper, we have endeavoured to show that the Semite may, with some probability, be regarded as the flower of a Negroid root; the Aryan, conversely, being derived from a Turanian source. But, whatever may be their origin, it is quite certain that, in their extra-Asian relationship, the former find their ethnic kinsmen mostly in Africa, and the latter in Europe.

Now, in any investigations or speculations having reference to prehistoric ages, we should keep these leading facts distinctly in view. For want of this clear apprehension of anthropological

data, Professor Rawlinson could speak of the language of the Egyptians, Canaanites, and early Chaldeans, together with that embodied in the Himyaric inscriptions of Arabia, as Turanian ! while even so profound an archæologist as Mr. Ferguson was led into the same error, at least of terminology, in treating of the architecture of the Phœnicians. And although Mr. Baldwin, in his *Prehistoric Nations*, has not fallen into an equally grave mistake, yet, when he so stoutly affirms that his favourite Cushites or Ethiopians were not Semites, we at once see that he has no conception of the truly generic character of the latter term, which, with him, obviously means only Hebrews and Ishmaelitish Arabs. Even granting the truth of his hypothesis, as to the great antiquity and widely diffused power of Arabian civilisation in early ages, it is at once obvious to the anthropologist that his Cushites were a branch of the great Semitic race, and, we may add, of its Amharic division. We allude to these little mistakes, not by way of disparagement to these distinguished men, for our obligations to them as contributors to historic anthropology are beyond expression ; but simply to show that the most assiduous labour, guided by the profoundest scholarship, is insufficient to guard us from the gravest misapprehension, if we pursue our investigations, whether philologically or archæologically, into the prehistoric past independently of racial landmarks.

And now, then, perhaps it may be asked what has anthropology to say to primitive civilisations and prehistoric nations ? and we reply that there are, as yet, but insufficient data for arriving at any definitive opinions on the subject. Archæology has pretty clearly demonstrated that the civilisation of Egypt and Chaldea was the result of a colonial extension from an older centre, this being also within the Semitic area ; its culture, so far as we can judge, bearing decided traces of Semitic thought-forms. There is no objection to this being located in Arabia, and attaching especially to the Kahtanic Arabs, according to Mr. Baldwin's theory, adequate proof being afforded of its truth, or, rather, shall we say, of its probability. It must also be admitted, that the prehistoric Phœnicians, judging by their architecture and inscriptions, bore a very near relation to those Cushites, whoever they were, that civilised Egypt and Chaldea. But, as anthropologists, we must affirm that the Phœnicians of history,

like the Hebrews, of whose language their later tongue was a dialect, bore evident traces of Aryan admixture and European reaction. We are also prepared to admit a pre-Aryan occupation of India; and this, too, by a people who erected cromlechs and employed Cyclopean architecture, and who thus, probably, were allied to the builders of Tiryns and Mycenæ; to say nothing of those who originated the so-called Druidic remains of Gaul and Britain.

Here, then, we seem to have got archæological foothold on the ground of a primitive and yet widely diffused civilisation. Who were the Cyclopean builders of prehistoric antiquity? What manner of men were these precursors of those who piled the pyramids, and erected the pagodas of Southern India, and laid those massive foundations on which, probably at a much later age, Solomon erected his Semityrian temple? We would say, decidedly, Caucasians, not Turanians. The latter are workers in earth, not in stone, as a rule.

The only question, then, remaining for decision is, were the Cyclopeans Aryans or Semites?—to be settled by a much more extended survey of their remains than has been yet instituted, more especially in Arabia and Northern Africa. Pending such investigation, however, we would observe that the style, grand, massive, sublime and simple, even at its culmination in the temple architecture of Egypt, is rather indicative of a Semitic type of thought and feeling. Let it be distinctly understood, however, that all this is mere speculation, of use only as being possibly suggestive of further inquiry.

At every stage of this investigation into primitive civilisations, we are reminded of the limitations of our knowledge. Was tree and serpent worship, which, with its terrible accompaniment of human sacrifices, still flourishes in some parts of Western Africa, an offshoot of the Sabæism of the higher races, or is it, as Mr. Fergusson supposes, a bequest from the lower realm of the inferior types. And here we are reminded of data, still probably in existence, but not yet rendered available. Governed by a spirit of almost missionary fanaticism, our travellers have despised, and therefore misunderstood, the "idolatrous" religions and weird superstitions of remote and primitive peoples, whose faith and rites are often an echo, even though rather faint and confused, from prehistoric ages. But, not only have we this province of

inquiry to fall back upon, it is also obvious there are sources of invaluable knowledge still unworked, among the scattered remnants of ancient civilised nations yet existing as partially isolated communities in the less disturbed areas of the world. Who, for instance, that knows that the Berbers of the Sahara, and especially the Tuaricks, speak a dialect of the old Cushite language, and have preserved the alphabet of the Himyaric inscriptions of Arabia and Chaldea, but must feel that their manners, customs, traditions, and literature, are worthy of the profoundest study, as a living remnant, however fragmentary, of an otherwise long vanished era. Could not our brethren of the Anthropological Society of Paris induce the French government to send out an expedition for this purpose, and also for a careful survey of the antiquities of Northern Africa, more especially those attaching to a pre-Carthaginian age of occupation. And cannot we induce our government to do the same thing for Arabia, where there are not only the ruins of ancient cities and other remains of a pre-historic civilisation, but also, as in Oman, the fragments of a pre-Mahommedan literature. In connection with the latter we would more especially name those forbidden works on mystic doctrine and magic, for the study of which the Omanees are famous, or rather infamous, throughout the more orthodox parts of the Peninsula, and where, if anywhere, we may hope to find some remnants of the inner life and profounder teaching of that "worship of the host of heaven," which, world-wide in its diffusion, seems to have had its principal, if not its primal seat in Southern Arabia, and to which there is still a secret leaning among the heterodox sons of Kahtan.

There is yet also another area worthy of the most careful survey in this connection. We allude to Central Asia. We know, from the travels of Arminius Vambery and others, that there are stupendous ruins in this region, which, when subjected to the requisite examination, will probably reveal something as to the age and race of their builders. Are they of the Cyclopean era, and were they erected by communities of Semitic or of Aryan blood?—or, as a yet remoter possibility, are they destined to revolutionise our opinions as to Turanian capability in architecture? In this area also let us endeavour to discover some remnants of pre-Buddhistic literature and history. Are there no isolated communities here, that, like the Berbers of the Sahara,

may suffice to show us something of the life and thought of an otherwise vanished age? Have we yet thoroughly examined the earlier seats of the Asian Aryans, and may they not reveal to us something which will help us to decide the vexed question of the proper and primal Eastern or Western habitat of this great race?

We throw out these suggestions because, in regard to prehistoric ages, our business is not to make a parade of our knowledge, but rather to discover where we may obtain more. Our reliable information, though vastly greater than that even of the previous generation, is yet insignificant. We have not yet arrived at the beginning, and cannot say to what race we owe the germs of culture. We have lifted the curtain from Egypt and Chaldea to discover they were colonial. We know that the Sanscrit-speaking Brahmans were not always in India, nor the Zendic Zoroastrians in Persia; but this does not take us to the dawn of civilisation. We have gone back another stage, but we have not arrived at the end of the vista, and thus we can only conclude with those "last words" of the great German, which Mr. Mahaffy has very appropriately placed on his title-page, "more light."

ART. VII.—THE ARMENIANS OF SOUTHERN INDIA.*

By JOHN SHORTT, M.D., M.R.C.P.L., F.L.S., etc.; Surgeon Indian Army,
and Superintendent-General of Vaccination, Madras Presidency.

EARLY in the sixteenth century a few Armenians found their way into Southern India, with the countenance and support of the late Honourable East India Court of Directors, under a contract with the said Company, dated 22nd January, 1668, in the fourth year of the reign of James the Second, by which was conceded to the Armenians equal privileges with British subjects. They were permitted to cross and recross the Indian seas, in the vessels of the Company, as free men, to trade as merchants, to purchase and hold landed property unmolested by the Company's

* Read before the Anthropological Society of London, May 31st, 1870.

officers, and to enjoy all civil offices and preferments like other subjects of the Company. In any of the towns or cities of the Company which contained forty or more Armenians, they were to be provided with temporary wooden places of worship, which might at any time be converted into more substantial ones, so as to worship God after their own fashion, and be unmolested in the free use and enjoyment of their religion ; while, as a further toleration, they were allowed an annual grant of fifty pounds to enable them to provide themselves with a priest to officiate in their place of worship.†

It is here necessary that we should briefly review the position of the Armenians as a nation at this period. The city of Ani, on the high road between Erzeroom and Tiflis, was the ancient capital of Armenia, which has long been deserted and in ruins. The Armenians themselves are scattered, somewhat after the manner of the Jews, over the face of the earth. They profess to be the descendants of Haïk, the grandson of Japhet, and after a descendant of his called Aram, they called the country Armenia, and themselves Armenians; while others, again, deny the indirect, but claim a direct descent from Haïk. As is well known, Armenia constitutes a large country in Asia. Situated partly in Turkey and partly in Persia, Armenia was subdued by (Semiramis) Shameran, who built a city, which she called after her own name, Shemiramgerd, now Van. The Armenian kingdom, which the Haïk dynasty had perpetuated for so many centuries, was extinguished by Alexander of Macedonia. Arsaces, the great-grandson of the founder of the Parthian Empire of the same name, placed his brother Valarsaces on the throne of Armenia, B.C. 150 ; and, under the rule of his successor, Tigranes, the Armenians attained a greater prosperity and position as a nation than they had ever gained before. This lasted until the whole country was overthrown by Antony, B.C. 34, in his Parthian wars, which, it is conjectured, led him to the neighbourhood of Tabreez. The Sassanidæ mounted the throne of Persia in A.D. 226, and the Romans afterwards established Tiri-dates in Armenia ; then it was that St. Gregory, a descendant of the Royal Arsacidæ, converted the King and his court to Christianity. Armenia was rent into factions during the wars of the

* Wheeler's *Olden Times*. Madras.

Romans and Sassanidæ, till at length these two powers made a formal division of the country.

The Armenians, as a nation, were considered an innocent and harmless people, not given to litigiousness. They were thrifty, sober, frugal, and well versed in all the places of trade, &c., and commodities in India. They were timid as a race, except a small section resident in Feraidoon, a district in the vicinity of Ispahan, who are said to be courageous and warlike, ready to appeal to arms in their constant quarrels with some of their neighbours.*

To return to Southern India. The Armenians were restricted in their commercial transactions to the East India Company and their subjects, and were to have nothing to do with interlopers and foreigners. They styled themselves freetraders, without king, company, or superiors, and held themselves in no way responsible for the actions of others of their nation. In process of time they appear to have conducted themselves with insolence towards the subjects of the Honourable East India Company, so as to draw the attention of Government to the fact; and one Codegee George, a part owner of the ship *London*, was detected in trading with Pondicherry, to the loss of custom to Madras. On being called to account, he and his co-partners confessed their faults, and, on promising amendment for the future, they were simply reprimanded.† In the year 1700 some of the Armenians established themselves about St. Thomas's Mount.

The Armenian religion was created, it is said, to give the king, as the head of the Church, power over the people; and thus they formed a division among Eastern Christians: one adhering to the Catholic Church, and the other rejecting Episcopacy, becoming monophysites, by allowing or admitting one nature to Jesus Christ, and giving the king absolute power over the liberties of his subjects. The Armenian church, called St. Mary, Black Town, Madras, was built by the Armenian community at their own expense, and is located at No. 1 in the head of the street called after the Armenians, Armenian Street, in which the bulk of the Armenians reside. This church was erected in A.D. 1712. The main building forms a long corridor, open at the sides, with a plain altar-place at the east end. The belfry is

* *Glimpses of Life and Manners in Persia.* By Lady Shell. 1856.

† *Wheeler's Olden Times.* Madras.

distinct from the main building, within the enclosure of the building, having a room for the residence of the priest, school-rooms, &c. Occasionally the Armenians obtained assistance from Government. In 1833 they thus obtained a donation of five thousand rupees from the late Lottery funds, for repairs, &c., which enabled them to build a substantial verandah, one hundred and eighteen feet in length, and ten feet wide on the east side. In 1839 a further donation of two thousand rupees was given them from the Woolley estate for the repairs of the church, while the community itself have made additions and alterations to the church and its environs. Their spiritual chief is a bishop, their priests are permitted to marry, and in their ceremonial observances there is a great resemblance to the Roman Catholic Church: for instance, in the use of vestments, incense, candles, veneration of pictures, representations of sacred subjects, holy water, sign of the Cross, with the exception of image-worship, which they do not adopt. In doctrinal points, the authority of the Pope is denied, while they reject certain councils, and the double procession of the Holy Ghost. They admit the seven sacraments, viz., transubstantiation, baptism, confession, etc., whilst they reject purgatory, yet they offer masses, prayers, and alms for the dead. They communicate in both kinds by dipping the bread in wine, consider the bonds of matrimony inviolable, and admit the efficacy of good works. Their fasts are not only numerous, but exceed the Roman Catholics both in their number and rigour. One hundred and fifty days are consumed in fasts during the year. Meat, fish, butter, cheese, eggs, and milk are excluded on fast days, and they are extremely rigid in observing them.

The Armenians established an Orphan Fund in 1783, and opened a school for the young of their community in 1795. They have also a cemetery of their own, which was built and made over to them in 1862 by the present Government. The affairs of the Armenian Church are managed by the officiating priest, assisted by a deacon and three churchwardens; the latter are elected from the leading members of the community, whilst in like manner the Orphans' Fund is looked after by governors, and the school by directors. The office of the priest is limited to two years, when he returns to his native land, and his place is taken up by another sent out for the purpose. The salary of the priest is two hundred rupees a month, that of the deacon

sixty rupees; this latter gentleman resides permanently in Madras. The invested funds in connection with the church, orphan, and school funds realise at present seven hundred rupees a month as interest, from which the salaries of the priest, deacon, and other officials and servants connected with the several funds are paid, and the balance is distributed among the poor of the community. The indiscriminate distribution of these funds to the young and old, has tended in some measure to encourage idleness and indifference among some of the younger members, who, from being placed on the receipt of a regular monthly salary, though it be small, prefer a life of idleness to one of utility either to themselves or the community.

In personal appearance the Armenians have a short, stout make of body, with full and large faces, well-chiselled bold features, prominent large noses, frequently somewhat rotunded at the ridge, and more or less hooked, with a general Jewish cast about their features. In their own country they dress after the Arab and Turkish fashion. Their women cover their mouths everywhere, even in their houses, and when out of doors wrap themselves up in white cloaks or *chudders*, and the married women live in great seclusion, which is imposed upon them with greater severity than among the Persians, so much so, that a woman for years after her marriage is not allowed to see her nearest male relations. She lives in silence, and conceals her face, even from her husband's father and mother. They are brought up in ignorance, and it is not thought prudent to educate them. This rule is now being broken through. In most parts where Armenians are found at the present day, the women are not only allowed more freedom, but mix and see more, not only of the male members of the family, but friends also—at least, so the Armenian priest, the Rev. Johannes Macartoon told me, nor do they cover their mouths, as was once the practice.

In southern India both males and females take to European dress and habits, and educate their children. Both boys and girls receive the best education their friends can give them; many send their children to England, so as to be more perfect in their education.

The Armenian marriage ceremony is much after our own fashion, by a priest. The bride and bridegroom are made to kneel, and are covered over with a shawl. The priest places his

prayer-book on their heads, and out of it he chants or repeats the prayers. When this is over, the young people are made to drink wine out of the same cup, when the covering is removed, and they kiss each other, which completes the ceremony.

The character of the Armenians in their own native clime is said to be mean, cringing, timid, and always intent on gain, in search of which they traverse all parts of Asia and Africa, as well as many parts of Europe. There is, certainly, a decided uniformity in the Armenian character wherever met with, both as regards frugality and self-denial. Their weak point is said to be a partiality to drink, with which they are readily allured. As a trader or man of business the Armenian is most keen and indefatigable; Tartary and China are the limits of his commercial enterprise. In the East he has a distaste for the profession of arms, while he is improvable, and readily adapts himself to the circumstances in which he may be cast. They are said to make valuable and industrious farmers in Persia and Turkey, and for centuries, amidst the several persecutions and trials, they have clung tenaciously to their faith and language. The Armenian community of Madras once numbered among its members some of the wealthiest and most thrifty of our Indian merchants, but they are now, with only a couple of exceptions, in reduced circumstances themselves, or their estates have been squandered by their descendants. The names of Asphar, Moorat, Sam, Lizar, Johanes, and Macartoon are of the past. The present Armenian community in Southern India scarcely numbers forty members. The most wealthy and highly respected gentleman who may be considered the chief and representative of the community, is now on the verge of fourscore years, and is the only adherent, with the members of his family, to the Roman Catholic Church among the Armenians. This gentleman has been blessed with a large and prosperous family: six sons and five daughters are now alive and grown up, and such of these as have married have allied themselves with English subjects.

The Armenians in this part of India generally attain a good old age, when they have not addicted themselves to the vice of intemperance. Among the present community there are some half a dozen or more among both sexes who are upwards of seventy years of age. Of the members of this community, one is a highly respected surgeon in the Madras Indian army, and

greatly reputed for his operative skill ; and another served as an assistant-surgeon in the navy during the Crimean war, and subsequently entered the British Medical Service, which he has since quitted for private practice in New Zealand. Another young Armenian is an officer in the British army, now serving with his regiment in Bengal. There were one or two who had taken to subordinate service as clerks, either in the Government or in mercantile offices. With few exceptions, all have been merchants, traders, or money-lenders. One or two are excellent lapidaries, expert in their work, and have dealt, and still deal largely in the purchase and sale of precious stones. But it is a source of regret that many members of this community have suffered from the vice of intemperance, and not a few have lost their all in horse-racing. For a long time after their arrival in India they seemed to avoid a commingling with other persons, and allied themselves with members of their own community ; but latterly this rule has been broken through, and some two or three gentlemen have married English ladies, and about the same number of Armenian ladies have married English officers in the Indian army. In many of the latter instances money seems to have been the grand inducement, and the wife's fortune the chief temptation to the alliance. There are, I believe, two or more instances, where children by Armenian ladies for British officers are now themselves in the Indian service, holding commissions with credit to themselves and honour to their families.

The Armenians suffer from the usual diseases of the country : consumption, asthma, &c., have been hereditary among some families, the male members have also suffered from rheumatism and syphilis. Notwithstanding this, they seem a vigorous race, and are, as a body, in the enjoyment of excellent health, leading a quiet, peaceable life. It is an uncommon thing to hear of an Armenian being in trouble. This may possibly rise from the smallness of their numbers. They are extremely prolific, both with Armenian and with English women. The same may be said of their females who have married British officers ; they are not only prolific, but rear successfully a large family of children. Among the present community there are a few accomplished members of both sexes, all of whom have received European education, and even mingle with the best and most refined of Indian society. Some two or three members have settled in England,

and are, I believe, chiefly living on their fortunes. Many who have attained princely fortunes in this country were originally mere speculators, who began with nothing save honesty of purpose, uprightness of conduct, and hardworking energy and perseverance, having from comparatively nothing but successful traffic and great industry, accumulated princely fortunes, which they bequeathed to their children. There is a great difference between the Armenians from Southern India and the new comers from Turkey or Persia. The Indian Armenians are quite Europeanised in ideas, manners, dress, and customs, while in the new comers the Turkish manners and dress are apparent, and their diet also forms the eternal *pillau*, which they partake *à la Turque* fashion with their hands. It is to be feared that, without the importation of fresh blood, and excepting those instances where European alliances have been formed, the Armenians of Southern India, within the course of a few years, will become extinct as a race. Already they have dwindled down into a small number, and among these are one or two celibates, who seem to have determined to terminate their lives as bachelors.

The following table gives the weights and measurements of the few Armenians I managed to measure and weigh.

Number.	Countries.	Age.	Height.	Circumference of				Thighs.	Length of			Breadth of			Weight.	
				Head.	Neck.	Chest.	Arms.		Arms.	Hands.	Legs.	Feet.	Hands.	Feet.		
a 1*	India.	33	68	21½	14	34	11½	17	28½	7	39	9½	3½	3½	150	Ed. Arathoon.
b 2*	Ditto.	39	68	21½	14½	38	11½	20	28	7	38½	9½	3½	3½	180	Ang. Arathoon.
b 3*	Turkey	50	64½	21½	14	31	8	14½	27½	7	37	10	3½	3½	135	J. Macertoom.
c 4*	India.	55	68	21½	14	35	10	18	30½	8	39½	10	3½	4	166	Satoor Lazar.
a 5+	Persia.	40	65½	19½	14½	32	8½	16½	31	7½	36½	10	3½	4	131	T. George.
a 6*	India.	44	62	22½	15	34	10	16	27½	6½	35½	9	4	4	164	M. Keerakoose.

* Eyes No. 2.

† Eyes No. 3.

a. Skin 24. b. Skin 21. c. Skin 23. d. Skin 22.

N.B.—The alphabets and numbers, with regard to the eyes and skin, refer to Paul Broca's Chromolithograph Plates.

ART. VIII.—LANGUAGE.*

THE lectures contained in this volume were delivered before the Royal Institution of Great Britain in March 1869, and are now published by request. A great deal of the matter which they contain is, of course, already well known; but the work is the production of a scholar, who writes well and with enthusiasm for his subject, and it contains, as we may, therefore, suppose, some new facts and ideas. The general conclusion arrived at by Mr. Farrar, with respect to the affinity of existing languages, is that only two great families can be distinguished; all languages outside of these groups being incapable of such a classification. These two families compose the languages spoken by the so-called Aryan and Semitic peoples. The former, according to the author's view, has three principal subdivisions; namely, the Kelto-Græco-Italic, the Slavo-Teutonic, and the Aryan Proper, each of which ultimately spreads out into several different languages. In an elaborate diagrammatic table, these several branches and offshoots are laid down in such a way as to leave nothing to be desired for the sake of clearness. This classification differs chiefly from that of Schleicher and others in the position assigned to the Keltic languages, which Mr. Farrar supposes to have been the first to be separated from the primitive Aryan stock.

Notwithstanding what Mr. Farrar says of the labours of Pritchard, Zeuss, and Dieffenbach (p. 53), the relation of the Keltic languages to those recognised as belonging to the Indo-European family is not yet settled. That there is a close connection between the Keltic and the Greek and Latin languages is unquestionable; but the reason is that a very large portion of the words of the former have been derived from the latter. Mr. Farrar takes for granted that the Kelts have migrated from Asia. There is literally no evidence in favour of this hypothesis. Those who favour the Asiatic origin of the Kelts endeavour to strengthen

* *Families of Speech*: Four Lectures delivered before the Royal Institution of Great Britain. By the Rev. Frederic W. Farrar, M.A., F.R.S. London: Longmans, Green, and Co. 1870.

their case by the fact that stone erections of a similar character are found both in Asia and Europe. But kjökken-möddings have been discovered in the Chatham Islands, having almost the same appearance as those in Denmark. There is, however, no evidence that they are the work of the Danes or of their Gothic ancestors. Monuments and erections of this description might be the work of any peoples. Again, had the Keltic peoples originated in Asia, they would, without doubt, have left traces of their habitat in the geographical names; whereas not a single name in that part of the globe can be shown to be of Keltic origin. On the other hand, a very large portion (perhaps seven-eighths) of the river names of Europe have been named by the Kelts, and they are more numerous in those parts of Europe that are known to have been most thickly inhabited by these peoples. This is a strong proof that the Kelts are aboriginal in Europe.

It has been stated that Mr. Farrar finds only two great families of languages, and his remarks on the term *Turanian* deserve to be quoted. He says: "The so-called *Turanian* languages are spoken by tribes and nations which have no ethnological affinities; that many of them differ from each other as completely and fundamentally as it is possible for languages to do, and at best the word *Turanian* has a mere geographical significance, and can only be correctly applied to the natives of Turkestan." The use of the term *Sporadic*, *i.e.*, "scattered", or *Allophylian*, "spoken by other different tribes of the human family", proposed by him, is very appropriate to describe the languages which are not Aryan and not Semitic, and which have not yet been grouped together by mutual affinities.

The lecture in which Mr. Farrar considers the Allophylian languages is one of the most interesting parts of his present work. The following remarks on the Khasia, one of the least known dialects, will furnish proof of the truth of this: "As another specimen of an isolating language, let me take the dialect of the Khasias, tribes of the hill-range which separates Eastern Bengal from Assam. In some respects, as a linguistic type, it may be regarded as a step higher than the Chinese, inasmuch as its words are real words, and the meaning is evolved from their simple juxtaposition, without the need of context or intonation. In Khasia, very often a word is a sentence. Thus,

bam means *eat*; and to get the word 'food', we have *ka jing bam*—*ka* being the feminine article, and *jing* meaning 'thing', and marking a substantive; so that *the-thing-eat*=food. Hence a vast number of their words begin with *ka jing*, and in a Khasia dictionary *k* is by far the most voluminous letter. Another peculiarity in an isolating language is the necessity of putting half-a-dozen words for one thing, as though to get nearer and nearer its essence by an agglomeration of its attributes. In Aryan languages, *one* quality or attribute of a thing is sufficient to furnish its name; in Sanskrit, for instance, the name of a bear may be derived from its shining fur, of a lion from its hairy mane (*kesin*), of an elephant from its bright ivory (*ibha*), or its drinking twice (*dvipa*), or from its tusks (*dantin*, *dvirada*), or from its having a hand (*hastin*, *karenu*), or from its having a serpent for a nose; but in savage languages there is often an attempt to heap up all the attributes of a thing together, and so make of them a single word—as when, in Mexican, a goat was called *head-tree-lip-hair*, i.e., the horned and bearded."

Thus far Mr. Farrar's general scheme; but, before concluding, some errors of detail may be pointed out. Thus, not to dwell on his statement that there is an ultimate identity of the vast majority of roots in all the Aryan languages—a statement which has not been supported by evidence—it cannot be admitted that various words for horse (Persian *fâl*, German *pferd*, A. S. *wieg*, Polish *kón*, Lat. *caballus*) have been derived, as Mr. Farrar asserts, from Sanskrit verbs and adjectives, or from nouns of a different meaning. This is not etymology. If the Saxons, Poles, etc., had borrowed their respective terms for a horse from the Sanskrit, they would most probably have used one of the many (there are quite twenty) words for that animal in Sanskrit—as *aswa*, *haya*, *heshin*, *vâjin*, *turaja*, *turaṅga*, *turaṅgama*, *vâtâyana*. The German word, *pferd*, is most probably derived from the Latin *veredus*, a German-Keltic compound; whilst the Saxon *wieg* may be from *eq-uus*, with a prefixed digamma.

Mr. Farrar says the word *βápBapoi* is an onomatopœia for unintelligible sounds; and that *Wälsch* (*Vlah*, *Wallachian*, etc.) means "confused", and *Deutsch* "clear of speech". But none of these etymologies will hold water. The term *βápBapoi* is evidently connected with Berber, a compound which may be better explained in Hebrew or Arabic. *Wälsch* means "foreign".

Vlah=Wallachian is probably from a Servian word signifying "shepherd". Again, Deutsch comes from *teut*, people, from *teut*, the earth; and indeed, in a note at p. 97, the author of the Lectures seems to admit something to the same effect. Neither is Mr. Farrar (citing Curtius) correct in his statement, that, in the Græco-Italic period, the word *gô* (Sanskrit for "cow") had assumed the forms of *βovs*, *bos*; these words being formed, not from the Sanskrit, but by onomatopœia.

On the difference between the Hebrew and Aryan family, Mr. Farrar says that, in Aryan, the determinant precedes the thing determined; we say sea-captain, not captain-sea. In Semitic, such compounds are chiefly proper names; and in them, by the very reverse process, the thing determined precedes the determinant—*e.g.*, Samuel means 'asked-God'; but the corresponding word, Theætetus, means 'God-asked'. "We say Newtown, or Neapolis, they, as in the name Carthage, said Town-new; we say *Friedrich*, they say *Ab-Salom*; -son is with us a suffix, *Ben-* is with them a prefix." The meaning of this last sentence is not very apparent. The Hebrew compound, *Abi-shalom*, means "father of peace." Does Mr. Farrar mean to say that the name *Friedrich* means "father of peace," or even "rich in peace"? The first syllable in this, as well as in many other names, does not signify "peace," but rather a "protector"; and the name *Friedrich* translates "powerful protector" (*fried-reich*). Further, many German names are often inverted: for instance, *Wolfgang*=*Gangolf*; *Rambert*=*Bertram*; *Hartman*=*Mannhardt*; so that the remark is scarcely applicable.

In conclusion, it will be as well to correct the errors into which Mr. Farrar has fallen with regard to the Slavonians. He tells us they have barely emerged from a long-continued barbarism, and have developed no very important or original literature. So far from this being the case, however, the Slavonians not only are a poetical people, but at the present day are perhaps the most musical people in Europe, and their literature during the last hundred years will vie with that of many of the European nations. Dr. Robert Knox says of them: "Little seems to me to be known of this noble race, the most intellectual, probably, of all. Superior to the Saxon and Keltic races in their taste for music, architecture, and the fine arts, generally, above all, gifted with high feelings, leading them

to view Nature's laws abstractedly, and to see in her operations principles imperceptible to others. The element of mind which leads to transcendentalism is distinctly Slavonian—at least, so it seems to me.”

With these few observations we heartily recommend the work to the perusal of scholars.

R. S. C.

ART. IX.—POLYGAMY: ITS INFLUENCE ON SEX AND POPULATION.*

BY JAMES CAMPBELL, Surgeon R.N., F.R.G.S., F.A.S.L., etc.

DURING my long sojourn in Siam I have had numerous opportunities of making notes on some subjects strictly professional, but still anthropological, and have from time to time collected statistics on such topics, to illustrate what obtains here. Those on the subject of this paper are not so extensive as I would wish, but are quite numerous enough to permit of general deductions being made. It is commonly believed that where polygamy is allowed or generally followed, a much larger proportion of female to male children is born than is the case in a monogamy-loving country; but, so far as I am aware, no tables have been published of the ratio of sexes in states addicted to polygamy. The following are at the disposition of the Society.

The Siamese are a monogamous polygynous people: that is, a male generally goes through the ceremony of marriage, according to the custom of the country, with one woman—never with more than one till death or disgrace has divorced the first wife; and, besides, he has concubines less or more, according to his rank, inclination, or ability to support them. Concubinage, however, is not looked upon as degrading, and it is not uncommon in a harem to find a concubine who is sister to the “head wife,” or to another concubine. Occasionally one meets a noble who has no “head wife,” and a few instances can be pointed out of nobles

* Read before the Anthropological Society of London, Feb. 15, 1870.

practising monogamy. Of course the lower classes practise monogamy or monogyny. The Government recognise the social evil—unlimited polyandry—and derive a revenue from the same, but the income thus obtained is spent in works of charity, and not entered to the credit of the treasury. I have collected and arranged my notes as under :

Family of	MOTHERS. No.	Sons.	CHILDREN. Daughters.	Total.
A. had	32.....	37.....	37.....	74
B. "	31.....	30.....	27.....	57
C. "	31.....	30.....	31.....	61
D. "	17.....	22.....	26.....	48
E. "	13.....	19.....	11.....	30
F. "	25.....	28.....	28.....	56
G. "	5.....	12.....	3.....	15
H. "	5.....	7.....	10.....	17
I. "	2.....	5.....	5.....	10
J. "	2.....	3.....	1.....	4
K. "	2.....	3.....	2.....	5
L. "	5.....	14.....	5.....	19
M. "	11.....	9.....	13.....	22
N. "	3.....	5.....	6.....	11
O. "	3.....	3.....	1.....	4
P. "	2.....	3.....	0.....	3
Q. "	2.....	2.....	2.....	4
17 had	191.....	229.....	211.....	440

The above table includes the offspring of his Majesty the first king, the late second king, the late Sur in ong Somdets called the great and lesser lords, three nobles who went as ambassadors to England, one royal page, &c. The table does not give the number of women in each harem—only those who became mothers—and does not include such children as may have been born since 1865. In the interval to date the family of A has augmented to eighty, of whom forty are sons and forty daughters. The father is sixty-three years of age, and is said to be very desirous of making up a total of one hundred. The letters representing families were substituted for the real names.

A glance at the general total will show either that in Europe an erroneous notion prevails on the subject of this paper, or that Siam is, on this matter, as on some others, an exceptional country. Instead of females greatly preponderating, the table shows that the proportion of the sexes is as nearly as possible what Hufeland gives for Berlin, and evinces a larger male-birth rate

than obtains for Great Britain. So much have I been struck with this anomaly to received dicta, that I have preferred giving the items for each household as originally collected instead of the general total.

Byron was wonderfully near the truth when he depicted his Sultan as having "fifty daughters and four dozen sons." It is a well-known fact that in first gestations the female progeny predominates. Carus and Gerson state that in a hundred families there were produced in their first births sixty-five females to thirty-five males. That I believe to be an error in printing, or if not so, then their hundred families were anomalously female-producing. In the above table the sex of one hundred and forty-nine first gestations only were obtained, and of these seventy-three were males and seventy-six females. This, however, I consider too large a male rate, and believe that more extended statistics would give a larger proportion of females. I am aware that a subject like this should be viewed from a much larger basis than I have given, and that mere proportion of sexes ought not to be the sole data to record, and from which to make deductions; but the difficulty and loss of time inseparable from an attempt to procure the respective ages, &c., of the parents, induced me to be content with showing what exists, without essaying to prove the why and wherefore. I have to remark that all the fathers referred to in the table married in early life; but A, after having two sons by one wife, entered the Buddhist priesthood, and did not quit the same till the expiry of more than a quarter of a century; hence seventy-two of his children—to date seventy-eight—were born after he had attained his forty-seventh year, and we may safely conclude that the mothers of all these were twenty years his junior—many of them still younger.

Effects on the Growth of Population.—To illustrate this division of the paper I shall begin with the previous table, and accordingly we have a total of a hundred and ninety-one mothers giving births to four hundred and forty children—a mean of 2.30 children per mother; but in Siam—probably in most countries permitting polygamy—we often find that the "head-wife," a first wife or a favourite one—the two last terms being frequently synonymous with concubine—produces a large family, and that

the other wives bring forth very seldom or not at all. For instance, in the family of

A.—One mother had	8	children.
B.— " "	11	
C.—Two wives "	16	,
D.—One wife "	12	"
E.— " "	14	,
H.— " "	8	"
L.— " "	10	"

Eight mothers had 79 children.

Hence, if we deduct these eight affection-monopolists and their offspring from the grand total, we have a sub-total of one hundred and eighty-three mothers with three hundred and sixty-one children—not 2 per mother. The number of children to each mother of the families B and M has not been obtained, but from the others comprised in the table I find the following, viz.

72	had each 1 child	=72	Class A.
32	" 2 children	=64	Class B.
12	" 3 "	36	Class C. 34 mothers. 133 children.
13	" 4 "	52	
9	" 5 "	45	
4	" 6 "	24	Class D. 11 mothers. 92 children.
1	" 7 "	7	
2	" 8 "	16	
1	" 9 "	9	
1	" 10 "	10	
1	" 12 "	12	
1	" 14 "	14	
<hr/> 149			<hr/> 361

Of course, I do not assume that every mother might have as many children as the average of the above; but I wish to show the probable loss of births to many of the mothers in consequence of the system now inquired into. Let us take Class C as a basis; and it will readily be admitted that 34 mothers, giving birth to 133 children—say 4 per mother—is not an unfair one. Look now at Class B; there we have 32 mothers, with a progeny of 64 only—two children per mother, or 50 per cent. below our assumed standard; whilst Class A—72 mothers, with each one child—equals 25 per cent. only of the offspring we would expect. Besides we have to remember that the first table only refers to mothers, and that in some of the families there were wives without children—junior wives, who had no or few opportunities of bearing. The table includes the families of

most influence in the country, and hence, also, those noted as the most numerously supplied with partners and the greatest number of offspring. A few families are given, showing a small child-bearing state; but the explanation of such is marriage of the male when up in years, etc. Family N.—three mothers and eleven children—consisted of one, four, and six children to each mother. Of course, it will be understood that many of the women who are young on their lord dying would re-marry; and so have children; but, generally, only childless ones would act thus, and in some families even these would be virtually prohibited from doing so. B. dying, a few of his widows might be asked to join the harem of A., and, on A.'s death, his heir might retain a few of the widows of A. and B. A son in this way may espouse his stepmother or stepaunt, a man his niece; for the Siamese have no prejudices against intermarriages, and do not believe in disease, etc., accruing from such consanguineous alliances. There is another view to take of the arrest of population under polygamy, and that is, that, if under monogamy a pair have no children, it may be as much the fault of the male as his partner; but, even in the case of the female, it only amounts to a loss of, say four, able-bodied progeny to the country. Take the converse in Siam of a noble with a well-stocked harem, and not a child born to him to hand his name to posterity. In this case the defect is the man's, and what a loss to the country from his impotency! I know a case in point—indeed many of them—where the wives number about forty, which, at the former ratio, and supposing that thirty of them would have married, give a loss to the country of a hundred and twenty able-bodied persons. Now the case I refer to is not a rare one—that is, impotency is not rare—though I admit the inmates of the harem of the other impotents may not be so notably numerous. The establishment referred to is that of a minister of state, but another equally high official has only had three children from a harem of about sixty women; and be it noted such are not young men just entering manhood, but active, aged nobles, one a sexagenarian, the other close upon being so. In truth, the loss of progeny in Siam from this cause is truly marvellous, and I think has not been hitherto sufficiently dwelt upon. Having shown that in this country the ratio of the sexes is so equally balanced, I may now state that protracted wars are not known

—wars of an exterminative class—and the males have a better chance of living and settling in their country, immigration, not emigration, being the rule, than obtains in any European state. Formerly, a large body of men were wont to enter the Buddhist priesthood, and thus, as in Italy, etc., become unprofitable as population propagators; but, since the advent of the present ruler—at least, since the opening of the country to extended commercial enterprise—a marked diminution of the inmates of monasteries has taken place. The former chief of a Buddhist temple deigned to doff his golden coloured robes—often styled emblems of purity, but really originally intended as a token of poverty—for those of regal power, and a goodly host of followers was permitted to accompany him into the world of lucre, where better opportunities offered for the advancement of their temporal concerns than had obtained during their juvenile days. Alas! for Buddhism—verily an Asian mystery—is losing caste.

ART. X.—PHRENOLOGY.*

“WHEN Causality does not exercise itself on well ascertained facts, it becomes the partner of its near neighbour Imagination, or Ideality. The Hon. Robert Boyle gravely states that the sound of a drum headed with the skin of a wolf would break the head of a drum headed with the skin of a sheep, and that the notes of a harp strung with foxgut would frighten fowls. ‘Persons’, says Pascal, ‘who see effects and cannot see their causes, are, in comparison with those who see causes, like those who have eyes only and not understanding. For effects are sensible, but causes are distinguished only by the understanding,—that is, by Causality’ (p. 70).

The above passage sufficiently illustrates the principles of the small and elegantly printed volume Dr. Donovan has published. Although we fail to recognise any new or striking illustrations

* *A Handbook of Phrenology.* By C. Donovan, Professional Phrenologist, Doctor of Philosophy, Fellow of the Ethnological Society. 8vo. London: Longmans: 1870.

of the phrenological argument, we discern many passages in which facts are described which had escaped the attention of scientific men prior to the publication of the present volume. A few of the more remarkable of these we shall repeat, in order to give our readers a fair sample of the work before us.

"An adult male head of only nineteen inches circumference is utterly incapacitated for any bread-earning occupation" (preface, p. v).

"Servants who are great breakers of glasses and teacups are sure to have this organ [weight] small" (p. 59).

"All the feeble and squeaking voices one hears are effects of small 'weight'" (p. 59).

"A few criminal casts it will be well to have, after some practice on living heads, such as Greenacre and Patch, Rush and Mrs. Manning, and about a dozen others" (p. 110).

"Some men are sweet to out-door acquaintance, but are anything but sweet when they hang up their hats at home" (p. 114).

"The pitted ear is usually found in full-bodied, corpulent, and short-necked men. . . . They usually are full feeders, and are kindly disposed towards cigars and bitter or other beer" (p. 122).

"Phrenology offers to man the very knowledge for which he ever has been wishing. The Rev. Sidney Smith sighed for a foolometer, and here is the very thing; and a rogueometer to boot. The whole secret is unfolded by a penny tape measure, and a practical eye" (p. 141).

"The heart is connected somehow with the organ of destructiveness, and it performs its office vigorously or feebly according to the development of this organ" (p. 147).

"When the helix, or leaf of the ear, has not its usual turn, or hem, but seems as if a hot iron had been laid on it, flattening it down, it is an invariable sign that there is gout or rheumatism in the constitution and in the family. As a rule, very large upper foreheads with small perceptive are indicative of scrofula" (p. 147).

"All precocious children are scrofulous" (p. 158).

"Persons with the ear well out on the head require but a moderate share of food, and in sickness—which they seldom are—can do with very little" (p. 186).

"The pitted ear people seldom can eat much vegetable food" (p. 186).

We have selected the above twelve quotations, which sufficiently illustrate the scope and spirit of the work. It is ornamented with remarkably lucid diagrams; and we can cordially

recommend it to all readers, both phrenological and anti-phrenological, who desire to be acquainted with the objects of the votaries of phrenological science. The experience which Dr. Donovan has acquired has led him certainly to arrive at broad generalisations; but, if only a few of the conclusions we have cited are correct, his work will be considered one of the most interesting productions which the phrenological school has evolved.

C. C. B.

ART. XI.—THE INFLUENCE OF THE PHALLIC IDEA IN THE RELIGIONS OF ANTIQUITY.*

BY C. STANILAND WAKE, Dir. A.S.L.

ANOTHER feature of the Mosaic legend of the "fall" which deserves consideration is the reference to the tree of knowledge or wisdom. It is now generally supposed that the forbidden fruit was a kind of *citrus*,† but certain facts connected with *arborolatry* seem to me to disprove this opinion. Among peoples in the most opposite regions various species of the fig-tree are held sacred. Thus it is, throughout nearly the whole of Africa, with the *banyan* (*ficus indicus*), the sacred tree of the Hindu Brahmins. Even in several of the Polynesian islands, as in various parts of the Indian Archipelago and in Northern Australia, the fig-tree is highly venerated. In ancient Egypt, the banyan, or the *ficus sycamorus*, was always considered sacred.‡ So it was in Greece and Italy. According to Plutarch, a basket of figs formed one of the chief objects carried in the procession in honour of Bacchus; and the sacred phallus itself appears to have been made of the wood of the fig-tree, as was also the statue of the phallic god Priapus.§

Judging from these facts, and considering that the sycamore was sacred among the Hebrews themselves—its fruit having the

* Concluded from p. 105.

† Smith's *Dictionary of the Bible*. Art., "Apple Tree".

‡ Wilkinson, *op. cit.*, vol. iv, pp. 260, 313. § Horace, 8th Satire.

significance of the virgin womb*—there can be little difficulty in identifying the fig-tree, whether the sycamore or the banyan, with the tree of knowledge planted in the midst of the garden of Eden. The sense intended to be conveyed by this expression would be evident enough without the introduction of the “tree of life”. That this is intended to represent the male element is undoubted. The Chaldean god Héa, who was symbolised by the serpent, was also the god of life and knowledge; and Rawlinson states that “there are very strong grounds indeed for connecting him with the serpent of scripture, and with the Paradisaical traditions of the tree of knowledge and the tree of life.”† The bo-tree (*ficus religiosa*) of the Buddhists is said to derive greater sacredness from its encircling the palm—the Palmyra palm being the *kalpa*-tree, or the “tree of life” of the Hindu paradise.‡ This connection is termed by the Buddhists “the bo-tree united in marriage with the palm”, and we have in it the perfect idea of generative activity, the combination of the male and female elements. Mr. Fergusson, in accordance with his special theory as to the origin of serpent-worship, thinks that this superstition characterised the old Turanian (by which probably he means Hamitic) empire of Chaldea, while tree-worship was more characteristic of the later Assyrian empire.§ This opinion is, no doubt, correct; and it means really that the older race had that form of faith with which the serpent was always indirectly connected—adoration of the *male* principle of generation, the primitive phase of which was probably ancestor-worship; while the latter race adored the *female* principle, symbolised by the sacred tree, the Assyrian “grove”. The “tree of life”, however, undoubtedly had reference to the male element, and we may well suppose that originally the *fruit* alone was treated as symbolical of the opposite principle.||

There is still an important point connected with the Hebrew legend which requires consideration—the nature of the protect-

* See Inman's *Ancient Faiths and Sacred Names*, vol. i, p. 108. This seems to have been the symbolical signification of the fig throughout the East from the earliest historical period; as the *pomegranate* symbolised the full womb.

† *History of Herodotus*, vol. i, p. 600. ‡ Tennent's *Ceylon*, vol. ii, p. 520 § *Op. cit.*, p. 12.

|| As to the sacred Indian fig-tree, see Ginguant's *Religions de l'Antiquité*, vol. i, p. 149, note.

ing *kerub*. That this was merely intended as a symbol of the deity himself, there is every reason to believe, and that the symbol was nothing more than the sacred bull of antiquity, is evident from the description of the kerub given by Ezekiel (chaps. i and x).^{*} But what was the religious significance of the bull, an animal which it would be easy to prove was venerated by nearly all the peoples of antiquity? It is now well known that the bull symbolised the productive force in nature, and hence it was associated with the sun-gods. The symbolic figure carried in procession during the festival of Osiris and Isis was representative, probably, of the phallus of this animal.[†] According to the cosmogony of the Zend-Avesta, Ormuzd, after he had created the heavens and the earth, formed the first being, called by Zoroaster "the primeval bull". This bull was poisoned by Ahriman; but its seed was carried, by the soul of the dying animal, represented as an *ized*, to the moon, "where it is continually purified and fecundated by the warmth and light of the sun, to become the germ of all creatures." At the same time, the material prototypes of all living things, including man himself, issued from the body of the bull.[‡] This is but a developed form of the ideas which anciently were almost universally associated with this animal among those peoples who were addicted to sun-worship. There is no doubt, however, that the superstitious veneration for the bull existed, as it still exists, quite independently of the worship of the heavenly bodies.[§] The bull, like the goat, must have been a sacred animal in Egypt before it was declared to be an embodiment of the sun-god Osiris. In some sense, indeed, the bull and the serpent, although both of them became associated with the solar deities, were antagonistic. The serpent was symbolical of the *personal* male element, or rather had especial reference to the life of *man*, || while the bull had relation to *nature* as a whole, and was symbolical of the *general* idea of fecundity. This antagonism was brought to an issue in the

* Faber's *Pagan Idolatry*, vol. i, p. 422; vol. iii, p. 606.

† See Dulaure, *op. cit.*, vol. ii, p. 32.

‡ Lajard, *Le Culte de Mithra*, p. 50.

§ This superstition is found among peoples—the Kafirs, for instance—who do not appear to possess any trace of planetary worship.

|| This is evident from the facts mentioned above, notwithstanding the use of this animal as a symbol of *wisdom*.

struggle between Osiris and Seti (Seth), which ended in the triumph of the god of nature, although it was renewed even during the Exodus, when the golden calf of Osiris, or Horus, was set up in the Hebrew camp.

The references made to the serpent, to the tree of wisdom, and to the bull, in the legend of the "fall", sufficiently proves its phallic character; which was, indeed, recognised in the early Christian church.* This view is confirmed, moreover, by analogous legends in other mythologies. The Hindu legend approaches very nearly to that preserved in the Hebrew scriptures. Thus, it is said that Siva, as the Supreme Being, desired to tempt Brahmá (who had taken human form), and for this object he dropped from heaven a blossom of the sacred fig-tree. Brahmá, instigated by his wife Satarupa, endeavours to obtain this blossom, thinking its possession will render him immortal and divine; but when he has succeeded in doing so, he is cursed by Siva, and doomed to misery and degradation. Mr. Hardwicke, when commenting on this tradition, adds that the sacred Indian fig is endowed by the Brahmans and Buddhists with mysterious significance, as the tree of knowledge or intelligence.† This legend confirms what I have said as to the nature of the Hebrew tree of knowledge, and also the phallic explanation of the "fall" itself, when we consider the attributes of the tempter of the Hindu story. The Persian legend preserved in the *Boun-dehesch* is, however, still more conclusive. According to this legend, *Meschia* and *Meschiané*, the first man and woman, were seduced by Ahriman, under the form of a serpent, and they then first committed "in thought, word, and action, the carnal sin, and thus tainted with original sin all their descendants."‡

Under the circumstances I have detailed, we can hardly doubt that the legend of the "fall" has been derived from a foreign source. That it could not be original to the Hebrews may, I think, be proved by several considerations. The position occu-

* In connection with this subject, see St. Jerome, in his letter on Virginité to Eustochia.

† *Christ and other Masters*, vol. i, p. 305.

‡ Lajard, *op. cit.*, pp. 52-60. The destruction of purity in the world by the Serpent Dahâka is stated in the 9th Yaçna, v. 27. We have probably here the germ of the fuller legend, which may, however, have been contained in the lost portion of the Zend-Avesta.

pied in the legend by the serpent is quite inconsistent with the use of this animal symbol by Moses.* Like Satan himself even, as the Rev. Dunbar Heath has shown,† the serpent had not, indeed, a wholly evil character among the early Hebrews. In the second place, the condemnation of the act of generation was directly contrary to the central idea of patriarchal history. The promise to Abraham was that he should have seed "numerous as the stars of heaven for multitude"; and to support this notion the descent of Abraham is traced up to the first created man, who is commanded to increase and multiply. It is very probable, however, that when the legend was appropriated by the compiler of the Hebrew scriptures it had a moral significance as well as a merely figurative sense. The legend is divisible into two parts—the first of which is a mere statement of the imparting of wisdom by the serpent and by the eating of the fruit of a certain tree, these ideas being synonymous, or, at least, consistent, as appears by the attributes of the Chaldean *Héa*.‡ The nature of this wisdom may be found in the rites of the Hindu *Sacti Puja*.§ The second part of the legend, which is probably of much later date, is the condemnation of the act referred to, as being in itself evil, and as leading to misery and even to death itself. The origin of this later notion must be sought in the esoteric doctrine taught in the mysteries of Mithra, the fundamental ideas of which were the descent of the soul to earth and its re-ascent to the celestial abodes after it had overcome the temptations and debasing influences of the material life.|| Lajard shows that these mysteries were really taken from the secret worship of the Chaldean *Myllitta*; but the reference to "the seed of the woman who shall bruise the serpent's head", is too Mithraic for us to seek for an earlier origin for the special form taken by the Hebrew myth. The object of the myth evidently was to explain the origin of *death*,¶ from which man was

* The turning of Aaron's rod into a serpent had, no doubt, a reference to the idea of *wisdom* associated with that animal.

† *The Fallen Angels*, 1857.

‡ See *supra*.

§ *Memoirs of the Anthropological Society of London*, vol. ii, p. 264, et seq.; and compare with the gnostic personification of "truth"; for which see King's *Gnostics and their Remains*, p. 39.

|| Lajard, *op. cit.*, p. 96.

¶ Jehovah threatens *death*, but the Serpent impliedly promises *life*, the former having relation to the *individual*, the latter to the *race*.

to be delivered by a coming Saviour, and the whole idea is strictly Mithraic, the Persian deity himself being a Saviour God.* The importance attached to *virginity* by the early Christians sprang from the same source. The Avesta is full of references to 'purity' of life; and there is reason to believe that, in the secret initiations, the followers of Mithra were taught to regard marriage itself as impure.†

The religious ideas which found expression in the legend of the fall were undoubtedly of late development,‡ although derived from still earlier phases of religious thought. The simple worship in symbol of the organs of generation, and of the ancestral head of the family, prompted by the desire for offspring and the veneration for him who produced it, was extended to the generative force in nature. The bull, which, as we have seen, symbolised this force, was not restricted to earth, but was in course of time transferred to the heavens, and, as one of the zodiacal signs, was thought to have a peculiar relation to certain of the planetary bodies. This astral phase of the phallic superstition was not unknown to the Mosaic religion. A still earlier form of this superstition was, however, known to the Hebrews, probably forming a link between the worship of the symbol of personal generative power and that of the heavenly phallus; as the worship of the bull connected the veneration for the human generator with that for the universal father. One of the primeval gods of antiquity was *Hermes*, the Syro-Egyptian *Thoth*, and the Roman *Mercury*. Kircher identifies him also with the god *Terminus*. This is doubtless true, as Hermes was a god of boundaries, and appears, as Dulaure has well shown, to have presided over the national frontiers. The meaning of the word *Thoth*, *erecting*, associates it with this fact. The peculiar primitive form of Mercury, or Hermes, was "a large stone, frequently square, and without either hands or feet. Sometimes the triangular shape was preferred, sometimes an upright pillar, and sometimes a heap of rude stones."§ The pillars were called by the Greeks *Hermæ*, and the heaps were known as *Hermæan*

* Lajard, *op. cit.*, p. 60, note.

† Some of the Essenes, who appear to have had connection with Mithraism, taught this doctrine.

‡ It is well known to Biblical critics that this legend formed no part of the earlier Mosaic narrative.

§ Faber's *Pagan Idolatry*.

heaps—the latter being accumulated “by the custom of each passenger throwing a stone to the daily increasing mass in honour of the god.” Sometimes the pillar was represented with the attributes of Priapus.*

The identification of Hermes or Mercury with Priapus is confirmed by the offices which the latter deity fulfilled. One of the most important was that of protector of gardens and orchards, and probably this was the original office performed by Hermes in his character of a “god of the country.”† Figures set up as charms to protect the produce of the ground would, in course of time, be used not only for this purpose, but also to mark the boundaries of the land protected, and these offices being divided, two deities would finally be formed out of one. The Greek Hermes was connected also with the Egyptian *Khem*, and no less, if we may judge from the symbols used in his worship, with the Hebrew *Eloah*. Thus, in the history of the Hebrew patriarchs, we are told that when Jacob entered into a covenant with his father-in-law Laban, a pillar was set up, and a heap of stones made; and Laban said to Jacob, “Behold this heap and behold this pillar, which I have cast betwixt me and thee; this heap be witness, and this pillar be witness, that I will not pass over this heap to thee, and that thou shall not pass over this heap and this pillar unto me for harm.” We have here the *Hermæ* and *Hermæan heap*, used by the Greeks as landmarks, and placed by them on the public roads. In the *linga* of India we have another instance of the use of the pillar symbol. The form of this symbol is sufficiently expressive of the idea which it embodies—an idea which is more explicitly shown when the *Linga* and the *Yoni* are, as is usually the case among the worshippers of the Hindu Siva, combined to form the *Lingam*. The stone figure is not, however, itself a god, but only representative of a spirit‡ who is thought to be able to satisfy the yearning for children so characteristic of many primitive peoples, this probably having been its original object, and the source of its use as an amulet for the protection of children against the influence of the evil

* See Dulaure, *op. cit.*, vol. i, as to the primeval Hermes.

† Smith's *Dictionary of Mythology*. Art. “Hermes”.

‡ *Linga* means a “sign” or “token”. The truth of the statement in the text would seem to follow, moreover, from the fact, that the figure is sacred only after it has undergone certain ceremonies at the hands of a priest.

eye. In course of time, however, when other property came to be coveted equally with offspring, the power to give this property would naturally be referred to the primitive phallic spirit, and hence he became, not merely the protector, as we have seen, of the produce of the fields and the guardian of boundaries, but also the god of wealth and traffic, and even the patron of thieves, as was the case with the Mercury of the Romans. The Hebrew patriarchs desired large flocks as well as numerous descendants, and hence the symbolical pillar was peculiarly fitted for their religious rites. It is related even of Abraham, the traditional founder of the Hebrew people, that he "planted a grove (*eshel*) in Beersheba, and called there on the name of Jehovah, the everlasting Elohim".* From the phallic character of the "grove" (*ashera*) said to have been in the House of Jehovah, and from the evident connection between the two words, we must suppose that the *eshel* of Abraham also had a phallic reference.† Most probably the so-called "grove" of the earlier patriarch, though it may have been of wood, and the stone "bethel" of Jacob, had the same form, and were simply the *betylus*, the primitive symbol of deity among all Semitic and many Hamitic peoples.

The participation of the Hebrew patriarchs in the rites connected with the "pillar-worship" of the ancient world, renders it extremely probable that they were not strangers to the later planetary worship. Many of the old phallic symbols were associated with the new superstition, and Abraham, being a Chaldean, it is natural to suppose that he was one of its adherents. Tradition, indeed, affirms that Abraham was a great astronomer, and, at one time at least, a worshipper of the heavenly bodies; and that he and the other patriarchs continued to be affected by this superstition is shown by various incidents related in the Pentateuch. Thus, in the description given of the sacrificial covenant between Abraham and Jehovah, it is said that, after Abraham had divided the sacrificial animals, a deep sleep fell upon him as the sun was going down, and Jehovah spoke with him. "Then, when the sun went down, and it was dark, behold a smoking furnace and a burning lamp that passed between those

* Genesis xxi, 33.

† Even if the statement of this event be an interpolation, the argument in the text is not affected. The statement sufficiently shows what was the form of worship traditionally assigned to Abraham.

pieces." The happening of this event at the moment of the sun's setting reminds us of the Sabæan custom of praying to the setting sun, still practised, according to Palgrave, among the nomades of Central Arabia. That some great *religious* movement, ascribed by tradition to Abraham, did take place among the Semites at an early date is undoubted. What the object of this movement was it is difficult to decide. It should be remembered that the Chaldeans worshipped a plurality of gods, supposed to have been symbolised by the seven planets. Among these deities the sun-god held a comparatively inferior position, the moon-god, *Hurki*, coming before him in the second triad.* It was at Ur, the special seat of the worship of the moon-god, that Abraham is said to have lived before he quitted it for Haran; and this fact, considered in the light of the traditions relating to the great patriarch, may, perhaps, justify us in inferring that the reformation he endeavoured to introduce was the substitution of a simple sun-worship for the planetary cult of the Chaldeans, in which the worship of the moon must to him have appeared to occupy a prominent place. The new faith was, indeed, a return to the old phallic idea of a god of personal generation, worshipped through the symbolical *betylus*, but associated also with the adoration of the sun as the especial representative of the deity. That Abraham had higher notions of the relation of man to the divine being than his forerunners is very probable, but his sojourn in Haran proves that there was nothing fundamentally different between his religious faith and that of his Syrian neighbours. I am inclined, indeed, to believe that to the traditional Abraham must be ascribed the establishment of sun-worship throughout Phenicia and Lower Egypt, in connection with the symbols of an earlier and more simple phallic deity. Tradition, in fact, declares that he taught the Egyptians astronomy;† and we shall see that the religion of the Phenicians, as, indeed, that of the Hebrews themselves, was the worship of Saturn, the erect pillar-god, who, under different names, appears to have been at the head of the pantheons of most of the peoples of antiquity. The reference in Hebrew history to the *teraphim* of Jacob's family recalls the fact that the name assigned to Abraham's father was *Terah*, a "maker of images." The *tera-*

* Rawlinson's *Five Ancient Monarchies*, vol. i, p. 617; ii, p. 247.

† Josephus, *Antiquities of the Jews*, chap. viii, 2.

phim were, doubtless, the same as the *seraphim*, which were serpent images,* and the household charms, or idols, of the Semitic worshippers of the sun-god, to whom the serpent was sacred.

Little is known of the religious habits of the Hebrews during their abode in Egypt. Probably they scarcely differed from those of the Egyptians themselves; and, even with the religion of Moses, so-called, which we may presume to have been a reformed faith, there are many points of contact with the earlier cult. The use of the ark of Osiris and Isis shows the influence of Egyptian ideas; and the introduction of the new name for God, *Jahve*, is evidence of contact with late Phenician thought. The ark was, doubtless, used to symbolise nature, as distinguished from the serpent and pillar symbols which had relation more particularly to man. The latter, however, were by far the most important, as they were most intimately connected with the worship of the national deity, who was the divine father, as Abraham was the human progenitor, of the Hebrew people. That this deity, notwithstanding his change of name, retained his character of a sun-god, is shown by the fact that he is repeatedly said to have appeared to Moses under the figure of a flame. The pillar of fire which guided the Hebrews by night in the wilderness, the appearance of the cloudy pillar at the door of the tabernacle, and probably of a flame over the mercy seat to betoken the presence of Jehovah, and the perpetual fire on the altar, all point to the same conclusion. The notion entertained by Ewald, that the idea connected with the Hebrew *Jahve* was that of a "Deliverer" or "Healer" (Saviour),† is quite consistent with the fact I have stated. Not only was the primeval Phenician deity, El, or Cronus, the preserver of the world, for the benefit of which he offered a mystical sacrifice,‡ but "Saviour" was a common title of the sun-gods of antiquity.

There is one remarkable incident which is said to have happened during the wanderings of the Hebrews in the Sinaitic wilderness, which appears to throw much light on the character of the Mosaic cult, and to connect it with other religions. I refer to the use of the brazen serpent as a symbol for the healing of the people. The worship of the golden calf may, per-

* The serpent-symbol of the Exodus is called a "seraph".

† *The History of Israel* (English translation), vol. i, p. 532.

‡ See Sanchoniatho (Cory, *op. cit.*).

haps, be described as an idolatrous act, in imitation of the rites of Egyptian Osiris worship, although probably suggested by the use of the ark. The other case, however, is far different; and it is worth while repeating the exact words in which the use of the serpent symbol is described. When the people were bitten by the "fiery" serpent,* Moses prayed for them, and we read that, thereupon, "Jehovah said unto Moses, make thee a fiery serpent [literally, a *seraph*], and set it upon a pole; and it shall come to pass, that every one that is bitten, when he looketh upon it, shall live. And Moses made a serpent of brass, and put it upon a pole, and it came to pass that, if a serpent had bitten any man, when he beheld the serpent of brass he lived."† It would seem, from this account, that the Hebrew *seraph* was, as before suggested, in the form of a serpent; but what was the especial significance of this healing figure? At an earlier stage of our inquiry, I referred to the fact of the serpent being, indirectly, through its attribute of wisdom, a phallic symbol, but also directly an emblem of life, and to the peculiar position it held in nearly all the religions of antiquity. In later Egyptian mythology, the contest between Osiris and the Evil Being, and afterwards that between Horus and Typhon, occupy an important place. Typhon, the adversary of Horus, was figured under the symbol of a serpent, called Aphôphis, or the Giant,‡ and it cannot be doubted that he was only a later form of the god Seth. Professor Reuvens refers to an invocation of Typhon-Seth;§ and Bunsen quotes the statement of Epiphanius that "the Egyptians celebrate the festivals of Typhon under the form of an ass, which they call Seth."|| Whatever may be the explanation of the fact, it is undoubted that, notwithstanding the hatred with which he was afterwards regarded, this god Seth, or Set, was at one time highly venerated in Egypt. Bunsen says that, up to the thirteenth century before Christ, Set "was a great god universally adored throughout Egypt, who confers on the sovereigns of the eighteenth and nineteenth dynasties the symbols of life and power. The most glorious monarch of the latter

* Much discussion has taken place as to the nature of these animals. For an explanation of the epithet "fiery", see Sanchoniatho, "Of the Serpent" (Cory, *op. cit.*).

† Numbers xxi, 8, 9.

‡ Wilkinson's *Ancient Egyptians*, vol. iv, p. 435.

§ Ditto, p. 434.

|| *Egypt*, vol. iii, p. 426.

dynasty, Sethos, derives his name from this deity." He adds: "But subsequently, in the course of the twentieth dynasty, he is suddenly treated as an evil demon, inasmuch that his effigies and name are obliterated on all the monuments and inscriptions that could be reached." Moreover, according to this distinguished writer, Seth "appears gradually among the Semites as the background of their religious consciousness"; and not merely was he "the primitive God of Northern Egypt and Palestine", but his genealogy as "the Seth of Genesis, the father of Enoch (the man), must be considered as originally running parallel with that derived from the Elohim, Adam's father."* That Seth had some special connection with the Hebrews is proved, among other things, by the peculiar position occupied in their religious system by the *ass*—the first-born of which alone of all animals was allowed to be redeemed†—and the *red heifer*—whose ashes were to be reserved as a "water of separation" for purification from sin.‡ Both of these animals were in Egypt sacred to Seth (Typhon), the ass being his symbol, and red oxen being at one time sacrificed to him, although at a later date objects of a red colour were disliked, owing to their association with the dreaded Typhon.§ That we have a reference to this deity in the name of the Hebrew lawgiver is very probable. No satisfactory derivation of this name, Moses, Mōsheh (Heb.), has yet been given. Its original form was probably Am-a-ses or Am-ses, which in course of time would become to the Hebrews Om-ses or Mo-ses, meaning only *the* (god) Ses, *i.e.*, Set or Seth.|| On this hypothesis, there may have been preserved in the first book of Moses (so-called) some of the traditional wisdom said to have been contained in the sacred books of the Egyptian Thoth, and of the records engraved on the pillars of Seth. It is somewhat remarkable that, according to a statement of Diodorus, when Antiochus Epiphanes entered the temple at Jerusalem, he found in the Holy of Holies a stone figure of Moses, represented as a man with a

* *God in History*, vol. i, pp. 233-4.

† Exodus, c. xxxiv, v. 20.

‡ Numbers, c. xix, v. 1-10.

§ As to the God Seth, see Pleyte, *La Religion des Pré-Israélites* (1862).

|| According to Pleyte, the Cabalists thought that the soul of Seth had passed into Moses (*op. cit.*, p. 124). It is strange that the name of the Egyptian princess who is said to have brought up Moses is given by Josephus as *Thermuthis*, this being the name of the sacred asp of Egypt (see *supra*). We appear, also, to have a reference to the serpent in the name Levi, one of the sons of Jacob, from whom the descent of Moses was traced.

long beard, mounted on an ass, and having a book in his hand.* The Egyptian mythos of Typhon actually said that Set fled from Egypt riding on a grey ass.† It is strange, to say the least, that Moses should not have been allowed to enter the promised land, and that he should be so seldom referred to by later writers until long after the reign of David,‡ and, above all, that the name given to his successor was Joshua, *i.e.*, *Saviour*. It is worthy of notice that Nun, the name of the father of Joshua, is the Semitic word for *fish*, the phallic character of the fish in Chaldean mythology being undoubted. *Nin*, the planet Saturn, was the fish-god of Berosus, and, as I think can be shown, he is really the same as the Assyrian national deity *Asshur*, whose name and office bear a curious resemblance to those of the Hebrew leader, *Joshua*.

But what was the character of the primitive Semitic deity? Bunsen seems to think that Plutarch, in one passage, alludes to the identity of Typhon (Seth) and Osiris.§ This is a remarkable idea, and yet curiously enough Sir Gardner Wilkinson says that Typhon-Seth may have been derived from the pigmy Pthath-Sokari-Osiris,|| who was clearly only another form of Osiris himself. However this may be, the phallic origin of Seth can be shown from other data. Thus, it appears that the word *Set* means, in Hebrew, as well as in Egyptian, pillar, and in a general sense, the erect, elevated, high.¶ Moreover, in a passage of the Egyptian Book of the Dead, Set is called *Tet*, a fact which, according to Bunsen, intimates that Thoth inherited many of the attributes of Set.** They were, however, in reality the same deities. Set, by change of the initial letter, becomes *Tet*, one of the names of Thoth, or rather the same name; as Set agrees with Seth.†† We have in this an explanation of the statement that Tet, the Phœnician *Taaut*, was the snake-god Esmun-Esculapius; the serpent being the symbol of Tet, as we have seen it to have been that of Seth also. In this we have a means of identifying the Semitic deity Seth, with the Saturn and

* *Fragments*, Book xxxiv. See, also, in connection with this subject, King's *Gnostics*, p. 91.

† Bunsen's *God in History*, vol. i, p. 234.

‡ Ewald notices this fact. See *op. cit.*, p. 454.

§ *Egypt*, vol. iii, p. 433.

|| *Op. cit.*, vol. iv, p. 434.

¶ Bunsen's *Egypt*, vol. iv, p. 208.

** Ditto, vol. iii, p. 427.

†† As *Tet* becomes *Thoth*, so *Mo-ses* becomes in the Hebrew *Mo-shesh*.

related deities of other peoples. Ewald says that "the common name for God, *Eloah*, among the Hebrews, as among all the Semites, goes back into the earliest times."* Bryant goes further, and declares that El was originally the name of the supreme deity among all the nations of the East.† This idea is confirmed, so far as Chaldea is concerned, by later researches, which show that Il or El was at the head of the Babylonian pantheon. With this deity must be identified the Il or Ilus of the Phœnicians, who was the same as Cronus, who again, was none other than the primeval Saturn, whose worship appears to have been at one period almost universal among European and Asiatic peoples. Saturn and El were thus the same deity, the latter like the Semitic Seth, being, as is well known, symbolised by the serpent.‡ A direct point of contact between Seth and Saturn is found in the Hebrew idol *Kiyun*, mentioned by Amos, the planet Saturn being still called *Kivan* by Eastern peoples. This idol was represented in the form of a pillar, the primeval symbol of deity, which was common undoubtedly to all the gods here mentioned.§ These symbolical pillars were called *Betyli*, or *Betulia*. Sometimes also the column was called *Abaddir*, which, strangely enough, Bryant identifies with the serpent-God.|| There can be no doubt that both the pillar and the serpent were associated with many of the Sun-Gods of antiquity.

Notwithstanding what has been said, it is undoubtedly true that all these deities, including the Semitic Seth, became at an early date recognised as Sun-Gods, although in so doing they lost nothing of their primitive character. What this was is sufficiently shown by the significant names and titles they bore. Thus, as we have seen, *Set* (Seth) itself meant the *erect*, *elevated*, *high*, and his name on the Egyptian monuments was nearly always accompanied by the representation of a stone.¶ *Kiyun*, or *Kivan*, the name of the deity said by Amos to have been worshipped in the wilderness by the Hebrews, signifies God of the Pillar. The idea embodied in this title is shown by the name *Baal*

* *Op. cit.*, p. 319.

† *Op. cit.*, vol. vi, p. 328.

‡ As to the use of this symbol generally, see Pleyte, *op. cit.*, pp. 109, 157.

§ On these points, see M. Raoul-Rochette's memoir on the Assyrian and Phœnician Hercules, in the *Mémoires de l'Institut National de France (Académie des Inscriptions)*, tom xvii, p. 47, et seq.

|| *Op. cit.*, vol. i, p. 60; vol. ii, p. 201.

¶ Pleyte, *op. cit.*, p. 172.

Tamar, which means "Baal as a Pillar," or "Phallus," consequently "the fructifying God."* The title "erect," when given to a deity, seems always to imply a phallic notion, and hence we have the explanation of the name *S. mou*, used frequently in the "Book of the Dead," in relation to Thoth, or to Set. There is doubtless a reference of the same kind in the Phœnician myth that "Melekh taught men the special art of erecting solid walls and buildings"; although Bunsen finds in this myth "the symbolical mode of expressing the value of the use of fire in building houses."† That these myths embody a phallic notion may be confirmed by reference to the Phœnician *Kabiri*. According to Bunsen, "the Kabiri and the divinities identified with him are explained by the Greeks and Romans as 'the strong,' 'the great;'" while in the book of Job, *kabbîr*, the strong, is used as an epithet of God. Again, *Sydyk*, the father of the Kabiri, is "the Just, or in a more original sense, the Upright," and this deity, with his sons, correspond to the Phœnician Pataikoi, and to Ptah, their father. Ptah, however, appears to be derived from a root, which signifies in Hebrew, "to open," and Sydyk himself, therefore, may, says Bunsen, be described as "the opener" of the Cosmic Egg.‡ The phallic meaning of this title is evident from its application to Esmun-Esculapius (the son of Sydyk) who, as the snake God, was identical with Tet, the Egyptian Thoth-Hermes.

The peculiar titles given to these pillar deities, and their association with the sun, led to their original phallic character being somewhat overlooked, and, instead of being the Father-Gods of human kind, they became *Powerful Gods, Lords of Heaven*. This was not the special attribute taken by other sun-gods. I have already stated that Hermes, and his related deities, were "Gods of the country", personifying the idea of general natural fecundity. Among the chief gods of this description were the Phœnician *Sabazius*, the Greek *Bacchus-Dionysos*, the Roman *Priapus*, and the Egyptian *Khem*. All these deities agree also in being sun-gods, and as such they were symbolised by animals which were noted either for their fecundity or for their salaciousness. The chief animals thus chosen were the *bull* and the *goat* (with which the ram was afterwards confounded), and this doubtless because they were already sacred. The sun appears to have been preceded by the

* Bunsen's *Egypt*, vol. iv, p. 249.

† Ditto, p. 217.

‡ See ditto, pp. 226-99.

moon, as an object of worship, but the Moon-God was probably only representative of the primeval Saturn,* who finally became the Sun-God *El* or *Il* of the Syrians and the Semites, and the *Ra* of the Babylonians. The latter was also the title of the Sun-God of Egypt, who was symbolised by the obelisk, and who, although his name was added to that of other Egyptian Gods, appears to have been the tutelary deity of the stranger kings of the 18th dynasty, whom Pleyte,† however, declares to have been Set (Sutech).‡ We are reminded here of the opposition of Seth and Osiris, which I have already explained as arising from the fact that these deities originally represented two different ideas—*human fecundity* and the *fruitfulness of nature*. When, however, both of these principles became associated with the solar body, they were expressed by the same symbols, and the distinction between them was in great measure lost sight of. A certain difference was, nevertheless, still observable in the attributes of the deities, depending on the peculiar properties and associations of their solar representatives. Thus the powerful deity of Phenicia was naturally associated with the strong, scorching summer sun, whose *heat* was the most prominent attribute. In countries such as Egypt, where the sun, acting on the moist soil left by inundations, caused the earth to spring into renewed life, the mild but energetic early sun was the chief deity.

When considering the sacred bull of antiquity, the symbol of the fecundating force in nature, I referred to Osiris, the national sun-god of the Egyptians, as distinguished from the Semitic Seth (Set), who was identified with the detested Shepherd race. The association of Osiris with Khem shows his phallic character;§ and, in fact, Plutarch asserts that he was everywhere represented with the phallus exposed.|| The phallic idea enters, moreover, into the character of all the chief Egyptian deities. Bunsen says: "The mythological system obviously proceeded from 'the concealed god', Ammon, to the creating god. The latter appears first of all as the generative power of nature in the phallic god Khem, who is afterwards merged in Ammon-ra. Then sprung

* Rawlinson's *History of Herodotus*, vol. i, p. 620.

† Ditto, vol. ii, p. 291.

‡ *Op. cit.*, p. 89, et seq.

§ Wilkinson, *op. cit.*, vol. iv, pp. 342, 260.

|| Bunsen's *Egypt*, vol. i, p. 423.

up the idea of the creative power in Kneph. He forms the divine limbs of Osiris (the primeval Soul) in contradiction to Ptah, who, as the strictly demiurgic principle, forms the visible world. Neith is the creative principle, as nature represented under a feminine form. Finally, her son Ra, Helios, appears as the last of the series, in the character of father and nourisher of terrestrial things. It is he whom an ancient monument represents as the demiurgic principle, creating the mundane egg.* The name of Ammon has led to the notion that he was the embodiment of the idea of wisdom. He certainly was distinguished by having the human form, but his hieroglyphical symbol of the *obelisk*, and his connection with Khem, show his true nature. He undoubtedly represented the primitive idea of a generative god, probably at a time when this notion of fecundity had not yet been extended to nature as distinguished from man, and thus he would form a point of contact between the later Egyptian sun-gods and the pillar-gods of the Semites and Phenicians.† To the Egyptians, as to these other peoples, the sun became the great source of deity. His fecundating warmth or his fiery destroying heat were, however, not the only attributes deified. These were the most important, but the Egyptians, especially, made gods out of many of the solar characters,‡ although the association of the idea of "intellect" with Ammon-ra must have been of late date, if the original nature of Ammon be what I have suggested.

As man, however, began to read nature aright, and as his moral and intellectual faculties were developed, it was necessary that the solar deities themselves should become invested with co-relative attributes, or that other gods should be formed to embody them. The perception of *light*, as distinct from heat, was a fertile source of such attributes. In the Chaldean mythology *Vul*, the son of *Anu*, was the god of the air; but his power had relation to the purely atmospheric phenomena rather than to light.§ The only reference to light I find in the titles of the early

* *Op. cit.*, vol. i, p. 388.

† In the temple of Hercules at Tyre were two symbolical *steles*, one a pillar, and the other an obelisk. See Raoul-Rochette, *op. cit.*, p. 51, where is a reference to a curious tradition preserved by Josephus, connecting Moses with the erection of columns at Heliopolis.

‡ Wilkinson, *op. cit.*, vol. iv, p. 299.

§ Rawlinson's *Herodotus*, vol. i, p. 608.

deities is in the character ascribed to *Va-lua*, the later *Bar* or *Nin-ip*, who is said to "irradiate the nations like the sun, the light of the gods."* But this deity was apparently the distant planet Saturn, although it may have been originally the moon, and I would refer to the Aryan mind the perception of light as a divine attribute.† Thus the Hindu *Dyaus* (the Greek *Zeus*) is the shining deity—the god of the bright sky. As such, the sun-gods now also become the gods of intellectual wisdom, an attribute which likewise appears to have originated with the Aryan peoples, amongst whom the Brahmans were the possessors of the highest wisdom, as children of the sun, and whose Apollo and Athênê were noble embodiments of this attribute. The Chaldean gods *Héa* and *Nebo* were undoubtedly symbolised by the wedge or arrow-head, which had especial reference to learning. In reality, however, this symbol merely shows that they were the patrons of letters or writing, and not of "wisdom," in its purely intellectual aspect. If the form of the Assyrian alphabetical character was of phallic origin,‡ we have here the source of the idea of a connection between physical and mental knowledge embodied in the legend of the "fall." In the Persian *Ahurô-Mazdáo* (the Wise Spirit) we have the purest representation of intellectual wisdom. The book of Zoroaster, the Avesta, is literally the "word"—the word or wisdom which was revealed in creation, and embodied in the divine Mithra, who was himself the luminous sun-god.

I have already referred to the similarity between the symbols of the sun-gods of antiquity and the natural objects introduced into the Mosaic myth of the fall; and it is necessary now to consider shortly what influence the phallic principle there embodied had over other portions of Hebraic theology. The inquiries of Dr. Faber have thrown great light on this question, although the explanation given by him of the myth of Osiris and of the kindred myths of antiquity is by no means the correct one. Finding an universal prevalence of phallic ideas and symbolism, Dr. Faber refers it to the degradation of a primitive revelation of the Great Father of the Universe. The truth thus taught was lost sight

* Rawlinson, *op. cit.*, vol. i, p. 620.

† *Mau*, the name of the Egyptian God of Truth, certainly signifies "light", but probably only in a figurative sense.

‡ The importance ascribed to the mechanical arts may, perhaps, lead us to look for the formal origin of this character in the "wedge", which was the chief mechanical power the ancients possessed.

of, and was replaced by the dual notion of a great father and a great mother—"the transmigrating Noah and the mundane Ark" of the universal deluge. Noah was, however, only a re-appearance of Adam, and the Ark floating on the waters of the deluge was an analogue of the earth swimming in the ocean of space.* There is undoubtedly a parallelism between the Adam and Noah of the Hebrew legends, as there is between the analogous personages of the other phases of these legends; yet it is evident that, if the deluge never happened, a totally different origin from the one supposed by Dr. Faber must be assigned to the great phallic myth of antiquity. It is absolutely necessary, therefore, to any explanation (other than the phallic one) of the origin of this myth, to establish the truth of the Noahic deluge.† Accordingly, a late American writer has formed an elaborate system of "Arkite symbolism," founded on the supposed influence of the great deluge over the minds of the posterity of those who survived its horrors. Mr. Lesley sees in this catastrophe the explanation of "phallism", which, "converting all the older Arkite symbols into illustrations of its own philosophical conceptions of the mystery of generation, gave to the various parts and members of the human body those names which constitute the special vocabulary of obscenity of the present day."‡

But the priority of these symbols or conceptions is the question at issue. Did the development of "arkism" precede or follow the superstitions referred to by Mr. Lesley as *Ophism*, *Mithraism*, and *Phallism*, all of which I have shown to embody analogous ideas? If the question of priority is to be determined by reference to the written tradition which furnishes the real ground of belief in a great deluge, it must clearly be given to the phallic superstition; for I have shown, conclusively as I think, that almost the first event in the life of man there narrated is purely phallic in its symbolism. Nor is the account of the fall the only portion of the Mosaic history of primitive man which belongs to this category. The Garden of Eden, with its tree of life, and the river which divided into four streams, although it may have had

* Faber, *op. cit.*, vol. ii, p. 20.

† Bryant, in his *Ancient Mythology*, has brought together a great mass of materials bearing on this question. The facts, however, are capable of quite a different interpretation from that which he has given to them.

‡ *Origin and Destiny of Man*, p. 339.

a secondary reference to the traditional place of Semitic origin to which the Hebrews looked back with regretful longing, has undoubtedly a recondite phallic meaning. It must be so if the explanation I have given of the myth of the fall be correct, since the two are intimately connected, and the garden* is essential to the succeeding catastrophe.

The priority of the phallic superstition over "arkism," is proved, moreover, by the undoubted fact that, even in the traditions of the race to whom we are indebted for the precise details of the incidents accompanying the deluge, the phallic deities of the Hamitico-Semites are genealogically placed long before the occurrence of this event. The Semitic deity Seth is, according to one table, the Semi-divine first ancestor of the Semites. Bunsen has shown clearly, also, that several of the antediluvian descendants of the Semitic Adam were among the Phœnician deities. Thus, the Carthaginians had a god Yubal, Jubal, who would appear to have been the sun-god Æsculapius, called "the fairest of the gods"; and so also, "we read in a Phœnician inscription Ju-Baal, *i.e.*, beauty of Baal, which Movers ingeniously interprets Æsculapius-Asmun-Jubal." Here, then, adds Bunsen, "is another old Semitic name attached to a descendent of Lamekh, together with Adah, Zillah, and Naamah."† Hadah, the wife of Lamekh as well as of Esau, the Phœnician Usov, is identified with the goddess worshipped at Babylon as Hera (Juno), and, notwithstanding Sir Gardner Wilkinson's dictum to the contrary, her names, Hera, Hadah, point to the connection with the Egyptian *Her Her*, or *Hathor*, who was the daughter of Seb and Netpe, as Hera was the daughter of Chronos and Rhea. The name of the god *Kiyun*, or *Kivan*, who was worshipped by the Hebrews, and who in Syria was said to devour children, is connected with the root *kun*, to erect, and therefore doubtless with the antediluvian *Kain* or *Kevan*. *Kon*, derived from the same root, was, according to Bunsen, a Phœnician designation of Saturn.‡ Even the great Carthaginian god *Melekh*, who was also held in universal honour throughout all Phœnicia, appears, although Bunsen does not thus identify him, to be no other than Lamekh, the father of

* Compare this with the figurative description of the garden of delights of "The Song of Songs".

† *Egypt*, vol. iv, p. 257.

‡ Ditto, p. 209.

Noah.* Ewald, indeed, says that both Lamekh and Enoch were gods or demi-gods, and that Methuselah was a sort of Mars, while Mahahal-el was a god of light, and Jareda a god of the lowland or of the water.†

The priority of the phallic superstition over Arkism, or rather the existence of that superstition before the formation of the deluge legend, is proved, moreover, by the agreement of this legend with the myth of Osiris and Isis in its primitive form, while Typhon (Seth) was honoured by the Egyptians as a great god.‡ Bunsen fixes the origin of this myth in its amended form so late as the thirteenth or fourteenth century, B.C.§ In the face of this agreement we can only suppose the myth and the deluge legend to have had the same basis—a basis which, from the very circumstances of the case must be purely “phallic.” This explanation is the only one which is consistent with a peculiarity in the Hebrew legend which is an insurmountable objection to its reception as the expression of a literal fact. We are told by the Mosaic narrative that Jehovah directed Noah to take with him into the Ark “of fowls after their kind, and of cattle after their kind, of every creeping thing of the earth after his kind, two of every sort.” Now, according to the ordinary acceptance of the legend, this passage expresses a simple absurdity, even on the hypothesis of a partial deluge. If, however, we read the narrative in a phallic sense, and by the Ark understand the sacred *argha* of Hindu mythology, the Yoni of Parvati, which, like the moon in Zoroastrian teaching, carries in itself the germs of all things, we see the full propriety of what otherwise is incomprehensible. As *εὐ ἀρχῇ*, the Elohim created the heavens and the earth, so in the Ark were the seeds of all things preserved that they might again cover the earth. Taken in this sense, we see the reason of the curious analogy which exists in various points between the Hebrew legends of the creation and of the deluge. This analogy being one of the grounds on which the hypothesis of the Great Father as the central idea of all mythologies has been based. Thus, the primeval ship, the navigation

* This notion furnishes an easy explanation, founded on the human sacrifices to the Phenician deity, of the curious verse in Genesis as to the avenging of Lamekh.

† *Op. cit.*, vol. i, pp. 266-7.

‡ For explanation of this myth, see Bunsen's *Egypt*, vol. iii, p. 437.

§ Ditto, p. 413.

of which is ascribed to the mythological being, is not the ark of Noah or Osiris, or the vessel of the Phœnician Kabiri. It was the moon, the ship of the sun, in which his seed is supposed to be hidden until it bursts forth in new life and power. The fact that the moon was in early mythologies a male deity almost necessitates, however, that there should have been another origin for the sacred vessel of Osiris. This we have in the *Hastoreth-karnaim*, the cow-goddess, whose horns represent the lunar ark, and who, without doubt, was a more primitive deity than the moon-goddess herself.* The most primitive type of all, however, is that of the *argha* or *Yoni* of the Indian Iswara, which, from its name, was supposed to have been turned into a dove.† Thus, in Noah and the Ark, as in Osiris and the Moon, we see simply the combination of the male and female elements, as they are still represented in the Hindu lingam. The introduction of the dove into the myth is a curious confirmation of this view. For, this bird, which, as “the emblem of love and fruitfulness,” was “consecrated to Venus under all her different names at Babylon, in Syria, Palestine, and Greece,‡ which was the national banner sign of the Assyrians, as of the earlier Sythic empire, whose founders, according to Hindu tradition, took the name of *Ionim* or *Yoniyas*, and which attended on Janus a diluvian “God of opening and shutting,” was simply a type of “the Yoni or Jonah, or Navicular feminine principle,” which was said to have assumed the form of a ship and a dove.§

In bringing this paper to a close, I would refer shortly to what may be called the modern religions—Brahminism, Buddhism, and Christianity—seeing that these still exist as the faiths of great peoples. As to the first of these, it may be thought that its real character cannot be ascertained from the present condition of Hindu belief. It is said that the religion of the Vedas is very different from that of the Puranas, which have taken their place. It should be remembered, however, that these books profess to reproduce old doctrine, the word “Purana” itself meaning *old*, and that Puranas are referred to

* Want of space prevents me from tracing the developments which the primeval goddess of fecundity underwent; but to the idea embodied in her may be traced nearly all the female deities of antiquity.

† Faber, *op. cit.*, vol. ii, p. 246.

‡ Kenrick's *Phœnicia*, p. 307.

§ Faber's *op. cit.*, and Bryant's *Ancient Mythology*.

in one of the Upanishads, while the *Tantras*, which contain the principles of the *Sacti Puja*, and which are, as yet, almost unknown to Europeans, are considered by the Brahmans to be more ancient than the Puranas themselves.* The origin of the ideas contained in these books is a difficult question. The germs of both Vishnu-worship and Siva-worship appear to be found in the Vedas,† and are undoubtedly referred to by the Mahabharata.‡ I am inclined to think with Mr. Fergusson and other late writers that they are only indirectly sprung from the primitive Hinduism. The similarity between Sivaism and the Santal worship of the Great Mountain, pointed out by Mr. Hunter, is very remarkable, and this analogy is strengthened by intermixture in both cases with river worship.§ There is no doubt that the Great Mountain is simply a name for the phallic emblem, which is the chief form under which Siva is represented in the numerous temples at Benares dedicated to his honour. Considering the position occupied by the serpent as a symbol of life, and, indirectly, of the male power, we should expect to find its worship connected to some extent with that of Siva. Mr. Fergusson, however, declares that it is not so; and, although this statement requires some qualification,|| yet it is certain that the serpent is also intimately associated with Vishnu. In explanation of this fact, Mr. Fergusson remarks: "The Vaishnava religion is derived from a group of faiths in which the serpent always played an important part. The eldest branch of the family was the Naga worship, pure and simple; out of that arose Buddhism. . . . and on its decline two faiths—at first very similar to one another—rose from its ashes, the Jaina and the Vaishnava." The serpent is almost always found in Jaina tem-

* On this question, see the *Memoirs* of the Anthropological Society of London, vol. ii, p. 265; also "Sketch of the Religious Sects of the Hindus", in the *Asiatic Researches*, vol. xvii (1832), 216 et seq.

† This question is fully considered by Dr. Muir, in his *Sanskrit Texts*, part iv, p. 54 et seq.

‡ Ditto, pp. 161, 343.

§ *Rural Bengal*, pp. 152, 187 et seq. This association of the mountain and the river is found also in the Persian Khordah-Avesta. See (5) Abun-Yasht, v. 1-3.

|| See *Tree and Serpent Worship*, p. 70; also Sherring's *Benares*, pp. 75, 89. Here the serpent is evidently symbolical of life. In the Mahabharata, Mahadeva is described as having "a girdle of serpents, ear-rings of serpents, a sacrificial cord of serpents, and an outer garment of serpent's skin." (Dr. Muir, *op. cit.*, part iv, p. 160.)

ples as an object of worship, while it appears everywhere in Vaishnava tradition.* But elsewhere Mr. Fergusson tells us that, although Buddhism owed its establishment to Naga tribes, yet its supporters repressed the worship of the serpent, elevating tree-worship in its place.† It is difficult to understand how the Vaishnavas, who are worshippers of the *female* power,‡ and who hate the *lingam*, can yet so highly esteem the serpent, which has, indirectly at least, reference to the male principle. Perhaps, however, we may find an explanation in Mr. Fergusson's own remarks as to the character and development of Buddhism. According to him, Buddhism was chiefly influential among Naga tribes, and "was little more than a revival of the coarser superstitions of the aboriginal races,§ purified and refined by the application of Aryan morality, and elevated by doctrines borrowed from the intellectual superiority of the Aryan races."|| As to its development, the sculptures on the Sanchi Topes shew that at about the beginning of the Christian era, although the *dagoba*, the *chakra*, or wheel, the *tree*, and other emblems, were worshipped, the serpent hardly appears; while, at Amravati, three centuries later, this animal had become equal in importance to Buddha himself.¶ Moreover, there can be no doubt that the *lingam* was an emblem of Buddha, as was also the *lotus*, which represents the same idea—the conjunction of the male and female elements, although in a higher sense perfect wisdom.** The association of the same ideas is seen in the noted prayer, *Om mani padmi hum* ("Oh, the Jewel in the Lotus"), which refers to the birth of Padmipani from the sacred lotus flower,†† but also, there can be little doubt, to the phallus and the yoni. We may suppose,

* *Op. cit.*, p. 70.

† Ditto, p. 62.

‡ Mr. Sellon, in the *Memoirs* of the Anthropological Society of London, vol. ii, p. 273.

§ It should not be forgotten that the Vedic religion was not that of all the Aryan tribes of India. (See Muir, *op. cit.*, part ii, p. 377, 368-383); and it is by no means improbable that some of them retained a more primitive faith, Buddhism or Rudraism; *i.e.*, Sivaism.

|| *Op. cit.*, p. 62. To come to a proper conclusion on this important point, it is necessary to consider the real position occupied by Gautama in relation to Brahminism. Burnouf says that he differed from his adversaries only in the definition he gives of Salvation (*du salut*). (*Introduction à l'Histoire du Buddhisme Indien*, p. 155.)

¶ Fergusson, *op. cit.*, pp. 67, 222, 223.

**See Guigniaut, *op. cit.*, vol. i, pp. 293, 160 note.

††Schlagenweit, *Buddhism in Thibet*, p. 120.

therefore, that, whatever the moral doctrine taught by Gautama, he used the old phallic symbols,* although, it may be, with a peculiar application. If the opinion expressed by Mr. Fergusson, as to the introduction into India of the Vaishnava faith by an early immigrant race, be correct, it must have existed in the time of Gautama; and, indeed, the Ionism of Western Asia is traditionally connected with India itself at a very early date,† although probably the early centre of Ion-ism, the worship of the Dove, or Yoni, was, as Bryant supposes, in Chaldea.‡ We see no trace, however, in Buddhism proper of *Sacti Pūja*, and I would suggest that, instead of abolishing either, Gautama substituted for the separate symbols of the linga and the yoni, the association of the two in the *lingam*. If this were so, we can well understand how, on the fall of Buddhism, Siva-worship§ may have retained this compound symbol, with many of the old Naga ideas, although with little actual reference to the serpent itself other than as a symbol of life and power; while, on the other hand, the Vaishnavas may have reverted to the primitive worship of the female principle, retaining a remembrance of the early serpent associations in the use of the *sesha*, the heavenly Naga with seven heads,|| figured on the Amravati sculptures. It is possible, however, that there may be another ground of opposition between the followers of Vishnu and Siva. Mr. Fergusson points out that, notwithstanding the peculiarly phallic symbolism of the latter deity, “the worship of Siva is too severe, too stern, for the softer emotions of love, and all his temples are quite free from any allusion to it.” It is far different with the Vaishnavas, whose temples “are full of sexual feelings, generally expressed in the grossest terms.”¶

Siva, in fact, is especially a god of intellect, typified by his being three-eyed, and, although terrible as the resistless destroyer, yet the re-creator of all things in perfect wisdom,** while Vishnu has

* These are figured in the *Journal* of the Royal Asiatic Society, vol. xviii.

† Higgins' *Anacalypsis*, vol. i, p. 332, et seq. See also p. 342, et seq.

‡ *Op. cit.*, vol. iii, p. 1, et seq. 25.

§ Mr. Hunter points out a connection between Sivaism and Buddhism. *Op. cit.*, p. 194.

|| See Mr. Fergusson, *op. cit.*, p. 70. The serpent is connected with Vishnuism as a symbol of *wisdom* rather than of life.

¶ *Op. cit.*, p. 71.

**Hence Siva, as *Sambhu*, is the patron deity of the Brahmanic order; and the most intellectual Hindus of the present day are to be found among

relation rather to the lower type of wisdom which was distinctive of the Assyrians among ancient peoples, and which has so curious a connection with the female principle. Hence the *shell*, or *conch*, is peculiar to Vishnu, while the *linga* belongs to Siva.* Gautama combined the simpler feminine phase of religion with the more masculine intellectual type, symbolising this union by the lingam and other analogous emblems. The followers of Siva have, however, adopted the combined symbol in the place of the *linga* alone, thus approaching more nearly than the Vaishnavas to the idea of the founder of modern Buddhism. Gautama himself, nevertheless, was most probably only the restorer of an older faith, according to which perfect wisdom was to be found only in the typical combination of the male and female principles in nature. The real explanation of the connection between Buddhism and Sivaism has perhaps, however, yet to be given.† The worship of the serpent god is not unknown, even at the present day, in the very stronghold of Sivaism,‡ reminding us of the early spread of Buddhism among Naga tribes. In the “crescent surmounted by a pinnacle, similar to the pointed end of a spear,” which decorates the roofs of the Tibetan monasteries,§ we, undoubtedly, have a reproduction of the so-called trident of Siva. This instrument is given also to *Sani*, the Hindu Saturn, who is represented as encompassed by two serpents,|| and hence we may well suppose the pillar symbol of this primeval deity to be reproduced in the *linga* of the Indian phallic god.¶ But the pillar symbol is not wanting to Buddhism itself. The columns said to have been raised by Asoka have a reference to the inscribed pillars of Seth. The

his followers. (See Wilson, *op. cit.*, p. 171. Sherring's *Sacred City of the Hindus*, p. 146, et seq.)

* The bull of Siva has reference to strength and speed rather than to fecundity; while the Rigveda refers to Vishnu as the framer of the womb, although elsewhere he is described as the *fecundator*. (See Muir, *op. cit.*, part iv, pp. 244, 292, also pp. 64, 83.)

† This question has been considered by Burnouf, *op. cit.*, p. 547, et seq. But see also Hodgson's *Buddhism in Nepal*, and Paper in the *Journal of the Royal Asiatic Society*, vol. 18 (1860), p. 395, et seq.

‡ See Sherring. *Op. cit.*, p. 89.

§ Schlagenweit. *Op. cit.*, p. 181.

|| Maurice's *Indian Antiquities*, vol. vii, p. 566.

¶ As to the identity of Siva and Saturn, see Guigniaut, *op. cit.*, vol. i, p. 167 note. *Kivan*, a name of Saturn, is really the same word as *Siva*.

remains of an ancient pillar, supposed to be a Buddhist *Lat*, is still to be seen at Benares,* the word *Lat* being merely another form of the name *Tet*, *Set*, or *Sat*, given to the Phenician or Semitic deity. In the central pillar of the so-called Druidical circles, we have, doubtless, a reference to the same primitive superstition, the idea intended to be represented being the combination of the male and female principles.†

In conclusion, it must be said that Christianity itself is certainly not without the phallic element. Reference may be made to the important place taken in Christian dogma by the "fall"—which I have shown to have had a purely "phallic" foundation—and to the peculiar position assigned to Mary, as the Virgin Mother of God.‡ It must not be forgotten, however, that, whatever may have been the primitive idea on which these dogmas are based, it had received a totally fresh aspect at the hands of those from whom the founders of Christianity received it.§ As to symbols, too, these were employed by the Christians in the later signification given to them by the followers of the ancient faiths. Thus, the fish and the cross symbols originally embodied the idea of generation, but afterwards that of life, and it was in this sense that they were applied to Christ.|| The most evidently phallic representation used by the Christian iconographers is undoubtedly the *aureole*, or *vessica*. This was generally elliptical in form, and contained the figure of Christ—Mary herself, however, being sometimes represented in the aureole, glorified as Jesus Christ.¶ Probably the *nimbus*, also, is of phallic significance; for, although generally circular, it was sometimes triangular, square, etc.** The name of Jehovah is inscribed within a radiating triangle.†† Didron gives a representation of St. John the Evangelist with a circular nimbus, surmounted by two sun-

* Sherring, *op. cit.*, p. 305, et seq.

† It should be noted that many of the so-called "circles" are in reality *elliptical*.

‡ On this subject, see Higgins's *Anacalypsis*, vol. i, p. 315, et seq.

§ We must look to the esoteric teaching of Mithraism for the origin and explanation of much of primitive Christian dogma.

|| The serpent elevated in the Wilderness is said to be typical of Christ. A Gnostic sect taught that Christ was Seth.

¶ Didron's *Christian Iconography* (Bohn), pp. 272, 286.

** It is a curious fact that Buddhist deities are often represented in the *Vessica* and with the nimbus. (See Hodgson's figures, plates v and vi, in the *Journal of the Royal Asiatic Society*, vol. 18.)

†† Didron, pp. 27, 231.

flowers, emblems of the sun, an idea which, says Didron, "reminds us of the Egyptian figures, from the heads of which two lotus-flowers rise in a similar manner."* There is also a curious representation, in this work, of the *divine hand*, with the thumb and two forefingers outstretched, resting on a cruciform nimbus (p. 215). In Egypt, the hand having the fingers thus placed was a symbol of Isis, and, from its accompaniments, there can be little doubt, notwithstanding the mesmeric character ascribed to it by Ennemoser,† that it had an essentially phallic origin, although it may ultimately have been used to signify life. There can be no question, however, that, whatever may be thought of its symbols,‡ the fundamental basis of Christianity is more purely "phallic" than that of any other religion now existing. I have referred to the presence in Hebraic theology of an idea of God—that of a Father—antagonistic to the Phœnician notion of the "Lord of Heaven." We have the same idea repeated in Christ's teaching, its distinctive characteristic being the recognition of God as the Universal Father, the Great Parent of Mankind, who had sent His son into the world that he might reconcile it unto Himself. It is in the character of a forgiving parent that Christians are taught to view God, when He is not lost sight of in the presence of Christ. The emotional nature of Christian faith, indeed, shows how intimately it was related to the older faiths which had a phallic basis. In Christianity, we see the final expression of the primitive worship of the father as the head of the family, the generator, as the result of an instinctive reasoning process leading up from the particular to the universal, with which, however, the dogma of the "fall" and its consequences—deduced so strangely from a phallic legend—have been incorporated. The "phallic" is, indeed, the only foundation on which an emotional religion can be based. As a religion of the emotions, therefore, the position of Christianity is perfectly unassailable. As a system of rational faith, however, it is far different; and the tendency of the present age is just the reverse of that which took place among the Hebrews—the substitution of a Heavenly King for a Divine Father. In fact, modern science is doing its best to effect for primitive fetishism, or demon-worship, what Christianity has

* Ditto, p. 29. † *History of Magic* (Bohn), vol i, p. 253, et seq.

‡ As to these, see King's *Gnostics*, p. 72.

done for phallic worship—generalise the powers of nature, and make of God a Great Unknowable Being, who, like the Elohim of the Mosaic cosmogony, in some mysterious manner, causes all things to appear at a word. This cannot, however, be the real religion of the future. If God is to be worshipped at all, the Heavenly King and the Divine Father must be combined in a single term, and He must be viewed, not as the unknowable cause of being, but as the Great Source of all being, who may be known in nature—the expression of his life and energy.

ART. XII.—DR. FRANZ UNGER.

ALTHOUGH the late Dr. Franz Joseph Andr as Nicolaus Unger, whose portrait is annexed,* was not an anthropologist in the strict sense of the word, but owes his gr at reputation chiefly to his botanical works, there are, nevertheless, among his numerous writings, various treatises relative to anthropology, which are mostly inserted in the *Transactions* and *Memoirs* of the Vienna Academy. Such are his “Botanical Excursions in the Field of Civilisation”; “The Vegetable World of the Present Period, in its Historical Signification”; “Nutritive, Stimulating, and Intoxicating Plants”, etc. Professor Unger has, besides, published several essays, which deserve more than a passing notice in this *Journal*; namely, “The Primitive World in its Phases of Development”,† and “Styria at the time of the Brown Coal Formation (Miocene Period)”.‡ It is needless to dwell at any length on the geological and anthropological views promulgated by the author in his “Primitive World”, as they have since undergone an entire change, confessedly owing to the influence of the Darwinian hypothesis. Thus, when Unger wrote this book, he was still a believer in successive creations, until they were, so to speak, arrested by the appearance of man, whose origin he placed in the alluvial period. A short extract from the concluding por-

* We have to thank the editor of Dr. Seemann’s *Journal of Botany* for the use of the block from which this portrait is struck.

† Die Urwelt in ihren verschiedenen Bildungs perioden. Wien, 1851.

‡ Steiermark, zur Zeit der Braunkohlenbildung. Wien, 1866.

tion of this work may, perhaps, be acceptable to our readers, were it only to compare it with the views set forth by Unger in a recent treatise. The passage runs thus :

“For many ages creative power had been exercised on the production of numerous forms of plants and animals, always advancing from the simple to the complex, from masses roughly formed to noble things. . . . Man appeared the noblest creation of an omnipotent master, whose will it was to vivify in him the thought of the universe. Thus we see him appear among the most diversified existences ; and of him alone may it be said for the first time, ‘The word was made flesh.’”

A comparison of the foregoing with the subjoined extract from his recent treatise, “Styria in the Miocene Period”, shows at a glance the complete change of his opinion in relation to cosmogony and the origin of man.

“When” (he observes, page 41) “men of science commenced searching the archives of nature, they found that the world was by no means a finished work, but that from period to period it had undergone mighty transformations. The Creator was thus imagined to be continuously labouring in his workshop, improving what was defective, repairing what was used up, and keeping the whole in working order. There cannot be a meaner view of the power and wisdom of the Creator. This theory, however, seemed supported by the fact that beings, which previously did not exist, appeared gradually to take the place of such as perished. True it is that many shook their heads and would not admit such successive emendated editions of nature. Still they were ready to acknowledge that the lower and more simple organisms might arise from certain combinations of matter and force, and to assume a perpetual creation rising periodically to greater efforts. This view was, and is even now, prevalent in some quarters. The question has, however, within the last few years, been put, whether the origin of new species of organic beings is a reality, nay, if it be possible. Zoologists, botanists, physicists, and chemists have zealously applied themselves to the task of watching, so to speak, the doings of the Creator in his secret laboratory, and the result has been that *omne vivum e vivo* stands now on the banner under which the naturalists march forward. This axiom, pronounced long ago, has, however, only now been almost demonstrated, and has led to the view: That the organic creation is *not* the product of a partial interference in the plan of the creation ; that *no* successive creations had for their result the present condition of the earth ; that *one* creation, *one* organism of the most simple kind was sufficient for the develop-



DR. FRANZ UNGER.

ment of the manifold organic beings of early and later periods ; that *one* organism endowed with the capacity for development presents the omnipotence and wisdom of the Creator in all its grandeur. There were thus *no* essays in the creation, but the unity of thought appeared at once in its full splendour."

In making the preceding quotation we do not intend to express our acquiescence in the views there enunciated. To our mind the continued *creation* of varying forms of life is as easy to an omnipotent being as the formation of a single organic germ, and, so far as we can judge, one mode is just as probable as the other. To Unger, however, it was apparently not so, although it is possible, judging from what he says as to the origin of man, that he used the term "creation" in an indefinite sense, or, it may be, to convey the idea of *conscious evolution*. Thus he adds:

"We are now compelled to assume that man's first appearance upon earth took place in the Brown-coal period (Miocene or Lignite period) ; not in a part covered with ice, but in a blooming territory. Europe was at that period a sort of seminary of organic beings—in other words, an *Eden*. The future will teach us whether a central spot was required, whether or not the whole surface of the earth was at that time the birth-place of a new life.... Man's physical origin could surely form no exception from natural laws. Like all organic beings, he became developed by nature, animated by the breath of God. Like his fellow-creatures, he had to gain strength in the struggle for existence, and so prepare himself for the development of his mental powers. I have in my 'Primitive World' represented man's appearance as the final act of the drama of nature. But much at that period was indistinct, and only recently cleared up. It was, therefore, natural that I followed tradition. Had I now to re-write the last page of the above work, much of the borrowed glitter of that ideal condition would vanish."

Two of the most interesting lectures* delivered by Dr. Unger bear especially on the question of man's distribution over the earth's surface. In one of these he gives certain botanical data to prove that "in the Tertiary period, or at the time when lignite was formed, Europe must have been connected with North America, and the Atlantic Ocean must have been divided at one place or other by a continent." In relation to this subject, Unger refers to the Egyptian tradition, preserved by Plato, of

* See translations of these lectures in the *Journal of Botany* (London) for 1865.

the former existence of the island-continent of Atlantis, and he seems to think an explanation may thus be obtained of the affinity between the indigenous population of America and that of the Canary Islands and Northern Africa, citing the opinion of Retzius (*Archiv. für Phys.*, 1858, p. 134) that the dolichocephalous natives of America (Guaranis, Caribs, &c.) are closely related to the Guanches of the Canary Islands and to the Atlantic peoples of Africa (Moors, Berbers, Tuaricks, Copts, &c.), and that there is a striking resemblance between the skulls of the Guanches and the Copts, and those of the Guaranis of Brazil. In the other lecture referred to, Dr. Unger established, by comparison of the present flora of Australia with that of Eocene Europe, that these distant parts of the earth were connected during some part of the Tertiary period. The continent of which Australia then formed part extended throughout the area now occupied by the Polynesian islands, and was united to Asia by way of the Moluccas. The important bearing which Unger's conclusion as to the antiquity and condition of the Australian continent—that it has “played out its part in the physical history of the world”—has, on the question of human distribution is evident, when we consider that on this area is to be found the lowest, as it is supposed to be the oldest, of the various races into which mankind is now divided. The views enunciated by him in these lectures are rendered the more interesting to the anthropologist by the fact, which may be admitted, that there exists a great amount of dolichocephaly as well in the natives of Western Africa as in the natives of Brazil, and that the two largest *foci* of extreme brachycephaly, the Malay Archipelago and the Coast Quichua nations, are only separated by the Pacific Ocean. The Andes of South America appear to afford a more perfect barrier than the ocean itself to the transmission of skull characters.

Considering that Dr. Unger was only indirectly associated with anthropology, it is not necessary to enter into full details of his life. It may be stated, however, that he was born on the 30th November, 1800, near Leutschach, in Styria, his paternal ancestors through many generations having resided in Carinthia, and his mother being a native of Marburg. At the age of ten he was sent to the Benedictine convent at Graz to be educated. Here he remained six years, studying law, but also attending a course of philosophical lectures, and the natural history lectures

of Dr. L. von Vest. Afterwards Unger went to Vienna and Prague to study medicine, and in 1823 he travelled through Northern Germany, making the acquaintance of Oken, Carus, Rudolphi, and other men of science. On returning to Vienna he was imprisoned for nine months for having gone abroad without permission ; but during this time he occupied himself with philological and philosophical questions, and investigations into the structure of invertebrate animals, and with dramatic attempts. On the death of his father, about 1827, Unger was obliged to practise medicine, and he then resided at Vienna. In 1830, however, he obtained a government appointment at Kitzbühel, in the Tyrol, and in 1835 he was appointed to the professorship of Botany at Graz, vacant by the death of Heyne. He was afterwards removed to the University of Vienna, where he continued to lecture on botany up to a few years of his mysterious death in February last. For several days during this month he had been confined to his bed by a cold, from which he had, however, nearly recovered, when, on the morning of the 13th, he was found dead in his bed, his body bearing several wounds, and there being marks of blood about the room. No satisfactory explanation of his death could be given, but in the popular mind it was connected with his antagonism to the Austrian Ultramontane party. The following quotation from a recent number of the *Journal of Botany*, with which our notice may be fitly ended, shows the nature of this antagonism :—

“ Though brought up by clerical tutors, Unger had so far emancipated himself from the trammels of his early education, that about the year 1856, when the Concordat was attempted to be enforced in Austria with all the vigour the law allowed, he incurred the serious displeasure of the Ultramontanes by the freedom with which he had handled certain scientific subjects in his ‘ Botanical Letters.’ He was openly denounced and preached against from the pulpit as a man who corrupted the youth of the empire by false teaching ; and attempts were even made to deprive him of his professorship at the University of Vienna, which he then occupied. The strongest possible pressure was brought to bear upon the Government to prohibit one of the Vienna theatres putting his far-famed ‘ Ideal Views of Primitive Nature’ (republished by Hardwicke in this country) upon the stage ; and it was only by the direct intervention of a personage of the highest rank that this novel mode of popularising the results of abstruse science was finally permitted. A man of Unger’s stamp,

enjoying a world-wide reputation of the soundest kind, a keen observer and a bold speculator, a man of genius, endowed at once with the caution of a Robert Brown and the daring of a Huxley, —such a man was certainly a formidable antagonist, who would speak out, regardless of all consequences, and who naturally had as many ardent admirers as he had deadly haters. When at the end of last year he delivered his annual address, as President of the Natural History Society at Graz, he boldly advocated freedom of inquiry on *all* subjects which can possibly interest man individually or collectively. This doctrine gave great offence to some members of the Society, who could not forgive their President for not making an exception in favour of religious belief, and they consequently left. But no sooner was this known than a large number of persons of the town, naturalists and not naturalists, joined the Society. It was a demonstration full of significance, which found its echo elsewhere. But it was the last time that Unger was to frighten his antagonists; six weeks later he was a corpse. Science, too, has its martyrs."

ART. XIII.—AN OBSTACLE TO EUROPEAN LONGEVITY BEYOND SEVENTY.*

BY SIR DUNCAN GIBB, BART., M.A., M.D., LL.D.

AT several meetings of the British Association, but more especially at Dundee in 1867, I drew attention to the position of the leaf-shaped cartilage, known as the epiglottis, situated at the back of the tongue, among healthy people of all classes and ages, and I gave the results obtained in an examination of as many as four thousand six hundred persons, ranging from infancy to extreme old age, carried over a period of several years, which went to show that in eleven per cent. it was drooping or pendent.

One of the most important facts which presented itself to my notice in the course of my investigations was that in all persons, whether male or female, beyond seventy, the position of the epiglottis was vertical. In not one single instance did my statistics show that it was drooping or pendent, as occurs in eleven per cent. of those among the healthy whom I have examined of all

* This is the paper referred to in the article on "Jewish Longevity", page 49 *supra*.

ages. This natural and correctly anatomical position of a vertical character in all old persons over 70, struck me as something especially important and interesting, as bearing somewhat on the attainment of old age amongst Europeans. I have gone over the statistics most carefully, regarding the age of the old people I examined, and find that nature has helped them to acquire that age, if over 70, by neither partially nor to some extent wholly closing the windpipe-door, so to speak, in the manner that pendency of the epiglottis does.

The ages of those who have confirmed the accuracy of my observations have been varying from 70 to 75 and 80, 85 to 90, 90 and 95; and not a single exceptional instance has been presented to my notice thus far of pendency in any of them. I could give a number of instances in detail; but my present purpose, so far as scientific accuracy goes, will be best accomplished by giving the names of some well known personages, whom I have either examined myself or as to whom I have been furnished with such testimony as seemed to me trustworthy and reliable. I may here observe that, to one familiar with the voice as uttered through a free and uncovered larynx—uncovered by a pendent epiglottis, and, therefore, unimpeded for the purposes of free breathing—it is possible to determine from it alone whether this cartilage is vertical or pendent. The late Lord Palmerston, who attained to a good age, was never troubled with pendency of the epiglottis, although the gouty malady to which he was subject has rather a predisposing effect towards it in some persons. His voice cannot be forgotten by those who heard it, and it was uttered in tones that plainly told there was nothing stopping the way for the entrance or exit of the air he breathed. If his voice was good, however, from the cause mentioned, it had a cracked tone about it which pointed to changes in the molecular constitution of his vocal cords, which were solely due to old age. The same with Lord Lyndhurst, although he passed away before much attention was paid to these important investigations. His epiglottis was as well formed, and as naturally placed in its proper vertical position, as in any young man of 20. So was Lord Brougham's, and the late Lord Campbell's. A dear old lady, and a near relative of my own by marriage, who died a little while back aged 95, not only had the cartilage naturally placed, but its colour was that of comparative youth. My ma-

ternal grandmother, also very recently deceased at the age of 92, was similarly situated. Her sister-in-law, my grandaunt, is still alive, at the same or even greater age, and her epiglottis is equally perfect in appearance and position. Instances are under my observation at the present time of persons of ages ranging from 76, 80, 83, 85, 88, 90, etc., where the rule—for so I may call it—holds good, of integrity of position and form of this curious and remarkable cartilage. But the most remarkable one of the kind that has yet come under my notice, was in an old gentleman, aged 102 years, an inmate of Morden College, Blackheath, whom I examined with the laryngoscope on the 4th of July last year, through the kind assistance of the Rev. Mr. Harbord, the chaplain of the College. It occurred to me that the *experimentum crucis* would be afforded here, and I made up my mind that the correctness of my views should stand or fall by the result of my examination. To my agreeable surprise, I found the cartilage vertical and possessing the natural form and colour belonging to a younger age. And, as far as the voice was concerned, it was extremely loud, sonorous, and powerful, and one that many a man might envy. There was nothing to muffle it, such as a drooping cartilage, and, consequently, it was loud, as nothing interrupted the vibratory waves of sound in their passage upwards between the fairly long and healthy vocal cords. But I must state that he was a Hanoverian, consequently a German; and I have already pointed out in another place,* that the Germans have the most powerful voices in Europe. At any rate, whether German or Briton, his epiglottis is normal in position at the great age he has attained of 102 years. With regard to his age, it has been clearly established by reliable documentary evidence; and the loss of one of his sons quite recently at the age of 75 is tolerably corroborative.

Since this paper was written, I examined Mrs. Hogg, aged 100 years, in St. George's Workhouse, Fulham Road, and saw a perfectly vertical leaf-shaped epiglottis. She was the person who went up in a balloon on her hundredth birthday, as mentioned in the newspapers.

The number of facts I have collected confirmatory of the correctness of my views on the subject is tolerably large; and, as they all point in one direction, the occurrence of a vertical epi-

* *Memoirs of the Anthropological Society*, vol. iii, p. 106.

glottis in all persons over 70, and none of pendency, so far as my experience has gone, points to a conclusion that cannot be set aside, and it is this: to attain a longevity beyond 70—for I have seen pendency in some persons approaching to that age—not only must the cartilage be vertical, but if it is pendent the possessor of it will not go beyond, or much beyond it. I speak, of course, of this condition amongst Europeans only; for, in the inhabitants of some of the countries of Asia and Africa, the great bulk of whom have a pendent epiglottis, old age, indeed, extreme old age, for what I know to the contrary, may be reached notwithstanding. Of the longevity of such persons, I must leave others to speak; but it occurs to me that the pendency under such circumstances must be either only partial or imperfect, and, therefore, not so directly a bar to comfortable breathing as in examples where it occurs, as I understand the term, regularly drooping over the top of the larynx, simulating a door ajar.

I may observe, however, that, even if old age is reached beyond 70 with a naturally placed epiglottis, it is no absolute bar to the occurrence of disease; nevertheless, it acts, at any rate, as a conservative agent in not in any way embarrassing the respiration, a highly important matter in such diseases as bronchitis, asthma, diseases of the heart, and allied complaints.

CONTEMPORARY LITERATURE.

THE GERMAN WORKING MAN; his Institutions for Self-Culture and his Unions for Material Progress. By James Samuelson. London: Longmans, Green, and Co. 1869.

To social economists and to the working classes, this little volume will, no doubt, be of considerable interest, and to them we can heartily recommend it as a useful, although not an exhaustive, contribution on the subject which it professes to treat. The student of anthropology will find in it but scanty materials to aid him in his special work. However, as the author is a careful and unprejudiced observer, his remarks ought not to pass entirely unnoticed by this *Journal* and the public for which it is written. Mr. Samuelson spent some months in Western Germany, and the German part of Switzerland, with a view to make himself personally acquainted with the social and

economical conditions of the German working men, and we cannot but feel interested in the comparisons instituted by him between the English and German artizans. We have seen similar topics treated in the reports of our diplomatic agents abroad, by special correspondents of powerful newspapers, and by professed philanthropists; but we prefer Mr. Samuelson's account, not only because it is more reliable as to facts and figures, but also because we notice in every page of his book that philosophic faculty of generalisation, without which observation is barren of results, and travels a profitless amusement not worth a printed record.

THE ROSICRUCIANS: their Rites and Mysteries; with Chapters on the Ancient Fire- and Serpent-Worshippers, etc. By Hargrave Jennings. London: John Camden Hotten. 1870.

THIS book contains a large mass of curious information bearing on religious symbolism, but its data are badly digested, and many of its conclusions are far from being incontrovertible. According to the author's views, the Rosicrucian system was founded on fire-worship. This may be true; but when it is added that fire, as the first principle in nature, is referred to by all religious emblems, we must demur. Fire had, undoubtedly, a religious significance in all ancient worships, but fundamentally they were almost purely phallic. This character is exhibited by most of the symbols, representations of which are given in this work, and which are, perhaps, its best feature. Probably it is new to most of our readers that *white* is "an unlucky colour for the royal house of England—at all events, for the king or queen of England personally"; as it is also for the Prussian royal family. The most curious chapter is that on the origin of the Order of the Garter, as to which Mr. Jennings says: "That archæological puzzle, the 'Round Table of King Arthur', is a perfect display of this whole subject of the origin of the 'Garter'; it springs directly from it, being the same object as that enclosed by the mythic garter, 'garder', or 'girther'". What this is may be judged of from the further remark, that the Order of the Garter is feminine, and that "its origin is an apotheosis of the 'Rose', and of a certain singular physiological fact connected with woman's life." The popular notion as to the origin of this renowned Order must, we think, be amended after the evidence furnished by Mr. Jennings; but we cannot admit his reading of "yon" for "honi".

OBSERVATIONS ON THE GEOGRAPHY AND ARCHÆOLOGY OF PERU. By the Hon. E. G. Squier, M.A., F.S.A., late Commissioner of the United States in Peru. London: Trübner and Co. 1870.

THE title of this memoir, which was read before the American Geographical Society in February last, speaks for itself. It is too modest, however; as these "observations" furnish conclusions of great importance, not only as to the explorations of the Peruvian rivers, and their practical results, but also as to the influence of the geographical formation of a country over the social, religious, and political organisa-

tions of its inhabitants, and their arts and architecture. On the former subject, Mr. Squier, after considering the claims of other rivers, says that the Ucayali "is the only stream likely to meet, in any great practical sense, the idea of permanent or rapid communication between Peru, the Amazon, and the Atlantic, or in its probable usefulness, as well as in length and volume, to indicate its right to the designation of Rio Madre del Amazonas" (p. 14). As to the latter point, Mr. Squier shows that the Inca rule began in the central valley of an elevated group of *bolsones*, "pockets", lying between the Vilcamayo river and the Apurimac. From their commanding position, the Incas were enabled to throw overwhelming forces successively on the isolated valleys radiating from their mountain centre. This they did, until they had subdued the inhabitants of all the *bolsones* northward to the equator, and southward beyond the desert of Atacama—an extent of thirty-seven degrees of latitude, thus moulding them into "the grandest of aboriginal American empires."

THE INDIANS OF CAPE FLATTERY, at the Entrance to the Strait of Fuca, Washington Territory. By James G. Swan. (Smithsonian Contributions to Knowledge.) 1869.

THESE Indians, who belong to the great Nootka family, whose boundaries are not yet clearly defined, possess many traditions and ceremonies of a highly interesting nature. The legend of the gigantic thunder-bird (Ha-hét-to-ak) is like that of the Arabian roc; and the numerous Schamanist ceremonies appear to show an affinity to the Esquimaux. The masks depicted on page 69 are, however, identical with those now used by the Aztec Indians on *fiesta* days in Nicaragua. A copious vocabulary of the language is given; but it is to be regretted that only one page out of the 108 of which the work is composed contains a description of the physical characteristics of the race. Nevertheless, the present work contains a host of valuable and instructive facts respecting the traditions and customs of these nations. It should be read at the same time with Mr. E. B. Bogge's paper on the same subject in the third volume of the *Memoirs* of the Anthropological Society.

THE GREY SUBSTANCE OF THE MEDULLA OBLONGATA AND TRAPEZIUM. By John Dean, M.D. (Smithsonian Contributions to Knowledge.) 1869.

THE researches of Mr. Lockhart Clarke on the intimate structure of some of the nervous centres in man have been extended by Dr. Dean in a series of beautifully executed plates, and in some minute descriptions of the organs in man and the mammalia. We do not here propose to give an analysis of the present work, as without the photographs the descriptions would not be intelligible; and we can only congratulate the Smithsonian Institute on being the means whereby one of the most important works in human histology has been published. The conclusions of the author apparently differ much from those of Kölliker or of Beale, and the nomenclature is entirely new.

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SCIENTIFIC SOCIETIES.

THE ETHNOLOGICAL SOCIETY OF LONDON.—At a meeting held on June 21st, Colonel Lane Fox made some remarks on the Dorchester dykes and Sinodun Hill, and showed that the works are British, not Roman.—Mr. David Forbes, F.R.S., read a paper on the Aymará Indians of Bolivia and Peru. He described them as a small, massive, thick-set race, with large heads and short limbs. The trunk is disproportionately large, and the capacity of the thorax is enormous, being adapted to meet the requirements of respiration in a rarefied atmosphere, as the Aymará lives at an elevation of from 8,000 to 16,000 feet above the sea-level. The proportions of the lower limbs are curious, the thigh being shorter than the leg ; the heel is inconspicuous. In colour, the Aymará varies from copper-red to yellowish-brown and blackish-brown, according to the altitude at which he lives. Many of the customs of the Aymarás depend on their peculiar conditions of life. In consequence of the low boiling-point of water at such great altitudes, beans are rarely used, and the food consists chiefly of potatoes peculiarly prepared. Clay is added to the food, not for any nutritious matter in it, but apparently only to increase the bulk of the meal. In religion, the Aymarás are nominally Christians. They appear to have no system of writing.—At a meeting of this Society, held on June 27th, Sir John Lubbock, Bart., described the opening of the Park Cwm Tumulus, in the peninsula of Gower, South Wales, and exhibited a plan of the structure.—The Rev. Canon Greenwell read a paper on his explorations in Grime's Graves, Norfolk. These so-called graves consist of a large number of pits and galleries in the chalk, excavated in prehistoric times for the working of flint. The explorations led to the discovery of many neolithic flint implements, picks made of the antlers of the red deer, and curiously sculptured fragments of chalk.—Mr. J. W. Flower exhibited a large collection of specimens from the neighbourhood of Mr. Greenwell's discoveries,

including objects of widely different dates, such as palæolithic and neolithic flint implements, a large British urn, and a fine Roman glass bottle.—Mr. Boyd Dawkins referred to the discovery of the remains of platynemic, or flat-shinned people, in Denbighshire. Explorations were made in a refuse-heap in a tumulus, and in two bone-caverns, and the human remains thus obtained were exhibited. These proved that platynemism was manifest in the ancient dwellers in North Wales, as well as in those who buried their dead in the cave of Cro-Magnon in France, and in those whose remains are found in the caves of Gibraltar.—Professor Busk exhibited and described the peculiarly formed tibiæ, and distinguished two forms of platynemism, but attached no value to this peculiarity as a race-character.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—At the fortieth meeting of this Association, held at Liverpool, from Wednesday, September 14th, to Wednesday, September 21st, the following papers, among others, were read in the Department of Ethnology and Anthropology—Section D, Biology—under the vice-presidency of John Evans, F.R.S., F.S.A. *September 15.*—"The Anthropology of Lancashire", and "The Ottoman Turks", by J. Beddoe, M.D., Pres. A.S.L.; "The Geological Changes which have occurred since the First Traces of Man in Europe", by P. M. Duncan, M.B., F.R.S. *September 16.*—"A Recent Examination of British Tumuli and Monuments in the Hebrides and on the Western Coast of Scotland", by John S. Phené, F.G.S., F.R.G.S.; "The Builders of the Megalithic Monuments in Britain", by A. L. Lewis, F.A.S.L.; "The Massagetæ and Sacæ", by H. H. Howorth; "The Shadows of Genius", by Walter C. Dendy, F.A.S.L.; "The Racial Aspects of Music", by J. Kaines, F.A.S.L. *September 17.*—"Exploration of the Victoria Cave, Settle, Yorkshire", by W. Boyd Dawkins, M.A., F.R.S.; "On certain Remarkable Earthworks at Wainfleet, in Lincolnshire", by the Rev. C. Sewell, M.A.; "On some Forms of Ancient Interment in County Antrim," by T. Sinclair Holden, M.D., F.A.S.L. *September 19.*—"Anthropological Note on Carved Stones recently discovered in Nithsdale, Scotland", by F. B. Grierson; "Remarks on Stone Implements from Western Africa", by Sir J. Lubbock, Bart., F.R.S.; "The Pre-Turkish Frontagers of Persia", by H. H. Howorth; "The Manx of the Isle of Man", by Richard King, M.D., F.A.S.L. *Sept. 20.*—"On Blight in Man and the Animal and Vegetable World", by Richard King, M.D., F.A.S.L.; "New Views on Craniology", by F. Bridges; "The Relation of the Ancient Moabites to Neighbouring Nations, as disclosed in the newly-discovered Moabite Stone", by the Rev. C. D. Ginsburg, LL.D.; "Physical and Mental Characteristics of the Australian Aborigines", by C. Staniland Wake, Dir. A.S.L.; "The Position of the Australian Languages", by Dr. Bleek.

ANTHROPOLOGICAL NOTES.

ORIGIN OF THE GIPSIES.—Dr. Kopernicki is preparing a memoir upon the difficult question of the "Origin of the Gipsies", which has already been solved in so many different ways. His residence in Wallachia, where gipsies are numerous, and afford the means of careful study, is an advantage which few of those who have written upon this strange race have enjoyed. As a craniologist, Dr. Kopernicki will devote his especial attention to the Gipsy skull, and compare it with that of some recognised Oriental races. It is also understood that carefully executed figures, so essential in these inquiries, will be freely employed. These illustrations are intended to be done by the geometric method of Lucae, but in a manner vastly superior to the attempts hitherto made in that style.

ANTHROPOLOGY OF THE WAR.—The Celtic race extends from a spot a few miles east of Calais to the frontiers of the German races at Monte Rosa, and the Celtic and Teutonic races are always conterminous. A rectification of the geographical boundaries and a strict anthropological scheme of delimitation would involve the cession by France of Dunkirk and its neighbourhood to the Vlamsch, or Flamands, and the acquisition by France of the whole Wallon district of Belgium, comprising half of that kingdom. Namur, Liege, Verviers, Spa, Charleroi, Philippeville, Dinant, Mons, and Tournay, are the principal Wallon cities; Luxembourg, on the contrary, is essentially Teuton. A small part of Lorraine, leaving Metz and Nancy to France, but comprising the Vosges hills, is German, while the whole of Alsace (Elsass) also appertains to the Teuton race. It will be seen that the above boundary is not one which bears any relation to treaty obligations, or conquest by either party to the war, and that a sternly anthropological arrangement would probably be distasteful to all nations. For it would involve the partition of Belgium; the southern part being absorbed by France, and the northern, or Flemish, division being left to separate existence, to fusion with Holland, or to future union with the North German Confederation. It appears hard to an anthropologist that Brügge (Bruges) and Dinant should be included in the same kingdom. Belgium is, indeed, founded on geographical and political reasons alone. Again, the cession of Alsace to Germany would embitter the population of the district, who, although fair-haired Teutons, by extraction, race, and language, yet are politically opposed to Prussia. The Rhine was certainly, in the times of Cæsar and Tacitus, the boundary between Gaul and Germany. "*Germania omnis a Gallis Rætisque et Pannoniis Rheno et Danubio fluminibus, a Sarmatis Dacisque, mutuo metu, aut montibus separatur.*" It is now, however, clear that there has been a westward migration of the Teuton races, and that Luxembourg, the Rhine provinces, and Alsace, are *pro hac vice* German. The light-haired population of North-eastern France, now found in Champagne, Lorraine, and, in fact, "Austrasia", is undoubtedly Celtic, and between it and the German races every point of dissimilarity exists.

Perhaps the broad and striking division of France which Berghaus has marked out into Langued'oc and Langue d'oil is a little too strong, and there can be no doubt that the men of Marseilles and the men of Brest are alike as opposed to the Prussians as the men of Paris. Out of the thirty-five and a half millions of the French population in 1846, 89·8 per cent. were truly French, 1·3 per cent. Italian, 4 per cent. Breton, 4·6 per cent. Teuton, and 0·3 per cent. Basque. The great German Confederation is composed of more heterogeneous materials. On the whole subject, we may advise our readers to re-peruse the article signed by Mr. L. O. Pike, "What is a Teuton?" (*Anthropological Review*, July 1868, p. 246).

ANTHROPOLOGY AT THE ROYAL ACADEMY.—The anthropologist who passed through the halls of the Academy, if a strict devotee to his science, could only regard the objective aspect of the paintings in the three points of view of race-distinction, correct anatomy, or mental art ideas. We purpose to point out a few of the principal pictures which convey anthropological lessons, without attempting to criticise others which are especially artistic, but which are beyond our province. Mr. E. T. Haynes' "Study of an Arab" (7) is really very good, and displays some acquaintance with Arab features. A similar subject is attempted by Mr. A. B. Houghton (316), but the beauty of the colouring and the artistic spirit should not blind one to the very badly drawn muscles of the feet. The best picture of Arab life, and perhaps the most thoroughly anthropological picture in the Exhibition, is Mr. J. Stirling's "Ablution Scene in Marocco" (124), in which the real Moorish features and style of dress are admirably depicted. Mr. R. Gavin's "La Mulâtresse" (23) betrays signs of having been drawn from an Indian mixed breed, and not from a negroid *métis*; but it is a very fine picture, and the misnomer may be pardoned. Incorrect drawing of anatomical subjects is primarily exemplified by Sir Edwin Landseer's "Queen Victoria Meeting the Prince Consort on his Return from Deer-Stalking in the Year 1851" (152), in which the head of one of the Royal children (sitting on a horse) is remarkably below the average proportional size of the head in the ordinary non-microcephalic European. In Mr. Poole's picture of the "Spectre Huntsman" (176), the young lady who fulfils the rôle of the ghost is very small. But there is no rule why ghosts should be of the normal "stature and bulk" of humanity. The late Mr. Maclise's very beautiful picture of "The Earls of Desmond and Ormond" (197) contains some very ingenious studies of the weapons and garb of the aboriginal Irish; but the faces are far more French than Irish. Mr. Millais' lovely picture of the "Knight Errant" (202) will perhaps evoke some criticism from those who insinuate that one of the lady's ankles is a little faulty, and shows an over development of the *tibialis anticus* muscle; but the force and beauty of the male face, the delicate contours of the arms in the female, and the exquisite finish of the texture quite disarms our criticism. Peculiar physiology is shown by Mr. H. O'Neill in his "Haidee and Don Juan" (261). We would recommend all young ladies who may be in a similar position to try Mar-

shall Hall's method, but not on any account to squeeze out the little breath which may remain in the patient's body, as Haidee does in the present instance. The doctrine of "atavism" is exemplified by Mr. Marcus Stone's "Henry VIII and Anne Boleyn" (891), in which the resemblance between "bluff King Hal" and the illustrious subject of (239) by Mr. Weigall, is shown by the wonderful similarity of lineaments in the two royal personages. The resemblance is indeed striking, and the anthropologist alone perceives its import. We must say a word for the first picture which met the eye of the visitor when entering the gallery, Mr. Val. Prinsep's "Death of Cleopatra" (16). In this the artist has not fallen into the blunder which has entrapped so many, of making the Ptolemaic queen a coarse, fat, semi-Nubian, porpoise-like being; but has given her the refined features of the Mauritanian, the Numidian, or the later Egyptian, and has added to his profound anthropological knowledge a beauty of colour never previously equalled by him. Mr. Prinsep and Mr. Stirling divided the anthropological honours of the Academy; and, *proxime accessit*, we may place Mr. Albert Moore's "A Garden" (966), in which the exquisite proportions of the female figure form one of the most beautiful contours we have ever seen. The late Dr. Knox would have revelled in the late exhibition, which, although possibly artistically inferior to a number of its predecessors, was nevertheless replete with subjects of the highest anthropological interest.

AFRICAN ANTHROPOLOGY.—The *Mittheilungen aus Justus Perthes' Geographischer Anstalt* (vol. xvi, No. 8) contains a valuable article by Dr. G. Nachtigal, on his travels in Tibesti. Dr. Nachtigal thinks that, notwithstanding Barth's philological investigations, the question as to the race affinity of the Tibbu is still undecided. They are of middle height, are very well built, and possess elegant yet muscular limbs. The majority of them are of a deep bronze colour, but without a trace of what is usually termed the negro physiognomy. On the whole, their physical and psychical peculiarities, their social and political arrangements, and their manners and customs, resemble those of the Berber much more than those of the Negro.

ORIGIN OF DISEASES.—In the last report of Mr. John Simon, F.R.S., Medical Officer of the Privy Council, appears a long article by Dr. J. Burdon Sanderson, F.R.S., on the "Pathology of Contagion," in which the researches of Professor Hallier, of Jena, are to a certain extent confirmed. This report has great interest in connection with Mr. Alfred Sanders' paper on "Pangenesis" in the present number.

DARWIN ON ANTHROPOLOGY.—Mr. Darwin's work on Man will be entitled *The Descent of Man and on Selection in Relation to Sex*, and will be uniform with the *Origin of Species*.

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ART. I.—ANATOMICO-ANTHROPOLOGICAL OBSERVATIONS UPON THE BODY OF A NEGRO.*

“ALI MARDJAN”, whose body served for these observations, was a fine robust Negro, aged thirty-five years. His origin was unknown; yet it is probable that he was a native of Darfour, or of Kordofan. Being still a child, he was bought, more than twenty years before, at Constantinople, by the Hospodar Al. Ghica, and brought up at his court, where he was a slave for more than a dozen years. Lastly, being emancipated, he entered into the service of different boyards in the capital; and, latterly, he was often seen lounging in the streets and the cabarets, till May 1866, when he was taken seriously ill, and being admitted into the Colza Hospital, at Bucharest, he died at the end of twelve hours.

His body was placed in my hands for dissection. Unfortunately, it was during a time of frightful heat, the thermometer indicating 113 deg. to 118 deg. Fahr.; and, besides, all the first day was lost in moulding the casts of his bust, his hand, and his foot. It was only on the second day, in the midst of excessive heat, that I was able to make the autopsy, in a miserable barrack made of planks.

The *structure of the body*, the stature being only 5 feet 3·2 inches, was slight yet robust. The prominences of the muscles and bones proper to his sex were but little pronounced, so that his external form was rather round and smooth, almost feminine.

The *skin*, very smooth and unctuous to the touch, was per-

* *Anatomiczno-Antropologiczne Postrzezenia nad Murzynem* opisał Dr. Izydor Kopernicki. Krakowie, 1870. From the *Annals of the Society of Sciences of Cracow*. Tom. xli.

fectly black (Nos. 41-48 of the Chromatic Scale of the Society of Anthropology of Paris). In certain regions, as the abdominal, lumbar, and sacral, the colour was deeper (No. 48, Chromatic Scale); and upon the scrotum and the penis it was quite black. On the contrary, the palms of the hands and the soles of the feet had a much less intense colour (Nos. 43-37), an ash-brown tint. This colour extended from the palms of the hands upwards to the fold of the hand with the forearm, as well as downwards upon the palmar and lateral faces of the fingers. The dorsal surface of the hand and fingers was very deep (No. 27). A similar colouration was observed upon the soles and dorsa of the feet. There were two corns upon the great and little toes, the colour of which was much deeper than that of the surrounding skin (Nos. 41-48).

Upon the thorax and extremities, there were very small cicatrices, which did not penetrate through the skin. Among these cicatrices, the oldest were as black as the surrounding skin, whilst the more recent ones were relatively paler (Nos. 30 and 30-39).

The *hair*, everywhere black (No. 48), varied, as to abundance and aspect, in different regions. Thus, as to its abundance. Upon the hairy scalp it sprung up in a very sudden and marked manner from the perfectly smooth surface of the surrounding skin, quite devoid of hair. The hair of the head terminated, before, very high up on the forehead; behind, it ended just upon the semicircular line of the occiput. On the temples, on the contrary, it descended much lower, and ended in thin striæ of hairs, which fringed the border of the jaw, coming down to the beard. Abundant hair covered all the chin, with the region below the chin, and extended to the angles of the jaw. Lastly, the pubis was poorly provided; and in the arm-pits there were some small tufts of crisp hair scattered about.

As to what concerns the aspect and character of the hair. That of the head was composed of little thin tufts of very crisp twisted hairs, disseminated in flocks scattered over all the surface of the scalp. These flocks were only from four to seven millimètres in thickness, and from six to twelve in length.

The whiskers were represented by a very narrow band of little scattered flocks. The beard, on the contrary, was composed of very abundant hair; the entire sub-mental region being covered

with very dense crisp hair, twice as thick and long as that of the head. The chin, up to the lower lip and all along the jaw, was richly provided with hair from thirty to sixty millimètres in length (one inch to two inches and a half), which was very elastic, and less crisp than that upon the head. The tufts of pubic hair were quite similar to those of the crisp moustachios, a little longer and more dense towards the root of the penis.

The *cellular tissue* was everywhere very abundant, dry, and, in those parts devoid of fat, presented a distinct white colour.

The *adipose tissue*, very abundant everywhere, even between the muscles, was of a lively deep yellow colour, quite similar to the colour of pure yellow wax. This colour was of a much deeper shade in the subcutaneous layers, than in the deeper ones between the muscles.

The *muscles*, of an icteric colour, light yellow, were moderately developed, but consistent and hard. As far as it was possible for me to determine in so precipitate a review, they did not present any remarkable anomalies. Neither were the masseters larger and more round, nor were the stylo-hyoid muscles less developed, as Soemmerring* and Serres† observed. No more did I meet with the least trace of the particular muscle between the cartilages of the third to the sixth ribs, which, according to Soemmerring,‡ was twice observed in Negroes, by Bonn and Sandifort. The fleshy portion of the gastrocnemii muscles was, nevertheless, more prominent in my Negro, and the tendinous portion began higher up, than ordinary.

The *blood* found in the heart and large vessels was dense and coagulated, and its serosity was of a vivid yellow colour, like saffron. The clots were black, viscous, semifluid. The fibrinous clots were yellow, as in jaundice, soft and friable. The heart itself was dilated and fatty. The position, the calibre, and the ramification of the principal blood-vessels did not present any deviations. The arteries and the veins of secondary order, as far as could be observed without artificial injection, did not present anything particular.

The *lymphatic glands* were everywhere very little developed.

As to the *membranes of the brain*, the dura mater did not offer

* Ueber die Körperliche Verschiedenheit des Negers von Europäer 1785.

† Bull. de la Soc. d'Anthropol. de Paris. Tom. ii, 1861. P. 65.

‡ Op. cit., p. 32.

anything remarkable, nor did the pia mater, upon which an attentive search did not produce a single spot deeper than the rest of its surface. The arachnoid equally, save its inflammatory thickening, did not present anything particular.

The *brain*, deprived of its pia mater, and attentively compared with the encephalon recently extracted from the skull of an adult Wallachian woman, did not present the least difference in the colour of its white and grey substances. The cerebral folds, excepting those which are found at the bottom of the fossa Sylvii, and which were less developed in the brain of our Negro, were as numerous, perhaps even more numerous and varied, than in the brain of the Valaque woman. Nevertheless, the sinuosities of these folds were evidently less deep in our Negro than in brains of Europeans. The two cerebral hemispheres, a little depressed above, extended backwards to the border of the cerebellum. The pons Varolii and the pedunculi cerebri had the common volume and form. The cerebellum, of the usual volume, was considerably flattened. Its laminae were broader and more prominent than ordinary. The medulla oblongata a little more slender. The corpora olivaria, small, but very prominent, presented, on being cut, the indentations of their grey substance much deeper than usual.

The *weight of the brain*, deprived of its membranes, was 955 grammes, of which 480 grammes belonged to the right hemisphere and 475 to the left. The cerebellum, with the annular protuberance, and the medulla oblongata not deprived of its membrane, weighed 150 grammes. The entire encephalon weighed 1105 grammes.*

The spinal marrow was not explored because I wished to preserve the skeleton.

The comparison of the *thickness of the nerves* of the peripheral, cerebral, and spinal nerves in the Negro, and in a Valaque of the same stature and constitution, measured at points perfectly analogous, is represented in the following table.

	VALAQUE.	NEGRO.
	Millimètre.	Millimètre.
Nervus olfactorius	3-3½	4-4½
„ opticus.....	5	5
„ oculomotorius	2	2

* 1105 grammes are equal to thirty-nine ounces avoirdupois. This is a low weight, the average weight in African races in general being 1244 grammes.

	VALAQUE. Millimètre.	NEGRO. Millimètre.
Nervus trochlearis	1	1
„ trigeminus, totalis	5½	6½
„ „ portio min.	1½	2
„ facialis.....	2¼	1¾
„ acusticus.....	3¾	3¾
„ abducens.....	1½	1¾
„ optic. chiasma, length	6	5
„ „ breadth	13	15
Tractus optici	5	6¼
Nervus hypoglossus	2½	2½
„ vagus	2½	2¾
„ acces. Willisii	2	2
„ medianus	4½	5
„ ulnaris.....	3	3
„ radialis	4	4½
„ musc. cutan.	2	2½
„ femoralis.....	5½	6½
„ ischiadicus	8	9
„ saphenus.....	1½	1½
„ popliteus.....	6	7½
„ peroneus	4½	4½

From this table, it is apparent that, excepting the cerebral nerves of the second, fourth, eighth, eleventh, and twelfth pairs, and the cubital, saphenus, and peroneus, which have the same thickness in the Negro as in the Valaque; and, excepting the facial nerve, which was half a millimètre finer in the first, all the other nerves were from a quarter to half a millimètre larger in the Negro than in the Valaque. It consequently follows that, contrary to the testimony of Tiedemann, who, perhaps, was not entirely impartial, our observation agrees perfectly with the anatomical preparation of M. Jacquart in the Galerie Anthropologique of the Jardin des Plantes, in proving the justice of the observation of Soemmerring, that the *nerves of Negroes are larger than those of whites, relatively to the mass of the brain*.*

The *larynx*, relatively larger than ordinary, was less prominent than in Europeans, and consequently resembled a feminine larynx.† Its cartilages were thicker and more voluminous than in us. The trachea was wide and flat from before backwards.

* *Op. cit.*, p. 58.

† I greatly regret not having been able to verify the very important fact observed and described by Sir Duncan Gibb, which came to my knowledge a year too late. "Essential Points of Difference between the Larynx of the Negro and that of the White Man", in the *Memoirs* read before the Anthropological Society, vol. ii, 1866.

The bronchial lymphatic glands very small. The thyroid gland, of ordinary volume, was trilobular; the lungs emphysematous, and very pigmentous—the left adherent, the right quite free.

The umbilicus, situated lower than ordinary, eighteen centimètres from the xiphoid process and thirteen from the pubis, formed a projection in the middle of a rather deep oval depression.

The subcutaneous cellular tissue of the walls of the abdomen was filled with fat of a yellow wax colour. The omentum, likewise, was composed of a smooth layer of fat two centimètres in thickness, and descended to the hypogastric region. The parietal and visceral portions of the peritoneum presented over all their extent a brilliant pearly colour, without offering the least spot of pigment anywhere, not even in the mesentery, where it is so frequent in whites.

The stomach and intestinal canal presented nothing remarkable. The mucous membrane of the entire canal was not pigmented. It was only upon the sides of the tongue, and upon the palate, as well as upon some places of the buccal membrane, that there were remarked striæ, of a deep violet colour, or blackish.

The liver, hypertrophied and fatty, the spleen, small and flaccid, and the kidneys, which were perfectly normal, did not present anything singular.

The left suprarenal capsule was completely atrophied, and reduced to a small mass of fat, the primitive glandular structure of which was only indicated by a semi-atrophied suprarenal artery, which penetrated into its interior. The right suprarenal capsule was very small, thirty-two millimètres long and eighteen broad; pale and flaccid.

The two ureters and the urinary bladder were considerably dilated.

Genital Organs.—The pendent scrotum was completely black. The circumcised penis was of an extraordinary volume. In a relaxed state it measured fourteen centimètres, or five and a half inches, in length, and three and a half to four and a half cent. in thickness. In imperfect erection, produced by the injection of melted suet, it attained a thickness of four to five and a half centimètres—*i.e.*, one and a half to two and a quarter inches—and a length of seventeen centimètres, or six inches and three-

quarters, measured from the upper edge of the pubis. The glans penis was broad, conical, and of a deeper colour than its neck (No. 43). Its edge was scattered all along with a row of hard and prominent glandules. The neck of the glans had a much lighter colour (No. 44-43); was richly provided with much developed smegmaceous glandules, especially near the frenulum.* The muscles of the penis were greatly developed; the bulb of the urethra very large (two and a half centimètres, without erection). The glands of Cowper and the prostate were of ordinary size, as well as the vesiculæ seminales, which contained a dirty fluid of a greenish grey colour.

The *nose* was fat, broad, and short, as usual in Negroes; the nostrils, wide and oval, were placed transversely in the plane parallel to the surface of the face. *Tongue* large and fleshy, with much developed *fungiform* papillæ. *Ears*, of medium size and but little prominency, longer than wide, with the inferior lobule only slightly detached. Muscles of the outer ear much developed.

Eyes.—Palpebral fissures narrow; eyelashes not long, but dense; conjunctiva of the globe of a dirty brown-yellow colour. Lachrymal caruncle small, but prominent. No trace of membrana nictitans. Lachrymal gland hard, and a little larger than common. The ocular bulb, also, a little larger (twenty-seven millimètres in longitudinal diameter, twenty-six millimètres in transverse diameter). The cornea (one centimètre in diameter) appeared to be rather small. Iris of a deep brown colour (No. 1), uniform, without radiated striæ. Pupil regularly round, neither dilated nor contracted. Upon the sclerotic there was a blackish streak, about one millimètre and a half in diameter, near and round the cornea. The choroid was carpeted with a very dense layer of pigment. The retina was thicker and less friable than ordinary.

The *hand* was rather small in proportion to the stature; the fingers a little longer relatively to the palm. The interdigital fold, as observed by Van der Hoeven, descended a little lower than in Europeans; that is to say, its termination corresponded to two-thirds of the length of the first phalanx. The thenar and hypothenar eminences were less developed, and, consequently, the palm of the hand was less hollow than in Europeans.

The *foot*, proportionally broad, was not flattened as it habi-

* This organ has been presented to the Société d'Anthropologie de Paris.

tually is in Negroes. The heel made no remarkable projection behind. The great toe was evidently shorter than its neighbour.

This investigation offers us many points of sufficient importance, in an anthropological point of view, to arrest attention upon their signification.

First of all, in resuming the principal anatomical data of our examination, we see that the greater part constitute the *tout ensemble* of the constant and invariable characters which are proper to the Negro race. Such are: the feminine form of the body, the black colouration of the integuments with its different shades in the different regions; the character of the hair; the abundance of the cellular tissue and the colour of the adipose tissue proper to Negroes; the smallness of the encephalic mass and the great relative thickness of the nerves; the low position of the umbilicus; the great volume of the liver; the greatly developed external genital organs; the form and colour of the eyes; the form of the ears and of the nose; lastly, the characteristic conformation of the hand, and the shortness of the great toe.

Finally, it imports us to dwell upon a subject still very unsettled in the anatomy of Negroes, that is, *the colour of cicatrices*.

Camper, Bichat, and Cruveilhier maintained that cicatrices are always white, whatsoever the colour of the skin may be. On the other hand, Cooper, Hunter, Virey, and others affirm, on the contrary, that cicatrices have the same colour as the skin, and even that they become deeper in colour. Uncertainty upon this point has not at present been removed, and diverse opinions *pro* and *con* upon the colouration of cicatrices have been many times uttered in the Société d'Anthropologie de Paris, especially on the occasion of the long and interesting debates on the action and influence of media, and on the causes of the different colour of the skin in different peoples.

As proofs of the non-colouration of cicatrices the following facts were cited. In Peru in the valleys of the Rio Huara, the Negroes are subject to a cutaneous disease called *Caracha*, which manifests itself in large pustules upon the thorax and the thoracic extremities. The indelible cicatrices which remain after these pustules are, it is said, white in Negroes and black in whites. The Society urged the need that this fact should be verified on the spot.*

* *Bull. de la Soc. d'Anth.*, 1861, t. ii, p. 133.

In the same Society, M. Broca, its General Secretary, demonstrated about three years ago a morsel of integuments of a Negress who died at the Hospital of Salpêtrière. This skin, completely black, was scattered over with little spots much lighter, cicatrices following the small-pox. This fact does not appear to be a sufficient proof against the colouration of cicatrices in Negroes; for, firstly, we do not know what time had passed between the attack of small-pox and the death of the Negress; besides, the difference between the colour of the skin and these cicatrices could not be very great during life, if it had escaped the attention of the physicians who treated her in her last sickness.*

On the contrary, M. Simonot, who studied Negroes closely during his somewhat long residence in Senegal, expressly affirmed that in them all sorts of cicatrices became black after a certain time, and that this effect it produced more promptly if these cicatrices are more exposed to the action of the sun.†

M. Pruner-Bey not having pronounced anything decisive upon this matter in his eminent monograph *Sur les Nègres*, nevertheless notifies that the colour of cicatrices in Negroes differs according to the colour of the skin itself, and according to the period of the cicatrization. As to our particular case it appears to us to be an unequivocal proof supporting this opinion, which is certainly incontestable in a physiological point of view: *that cicatrices among Negroes become as deeply coloured as their skin, and this independently of the influence of media.*

In favour of this opinion we might also cite the small detail observed in our case, that the *corns* on the feet were much more deeply coloured than the skin of the toes. This circumstance, which has not yet been mentioned, as it appears to us, by anyone, tends to prove that the secretion of pigment in Negroes is as active and abundant in tissues newly formed as in the skin itself.

In what precisely concerns this immense production of pigment, which characterises the organism of Negroes, our case offers us upon this point two considerable deviations from what it generally observed in this race.

According to our manner of understanding it, in this immense quantity of pigment which is produced physiologically in Negroes

* *Bull. de la Société*, 2me série, t. ii, p. 509.

† *Id.*, 1862, t. iii, p. 144.

there may be distinguished two varieties: the yellow pigment (icterique) and the black (melanotique).

The first, the vehicle of which is the serum of the blood, gives the yellow colour to the conjunctive tissues and the fibrous tissues, as well as to the medullary substance of the brain. And it is the cause of the colour so particular of their adipose tissues, of their conjunctivæ, and of the fibrous membranes, for example, of the periosteum. It is this pigment with which the *sarcoléme* is impregnated, which gives that icteric colour to their muscles; and, lastly, it is from it that the dirty-yellow colour of the conjunctiva of the eyes is derived, where the black pigment must assuredly mix in a trifling quantity.

The black pigment which has its principal seat in *the solid parts of the blood*, is secréted and in the most considerable quantity under the epidermis, where it forms a continuous coat over all the surface of the dermis. Then we see it disposed in a thin and interrupted coat under the epithelium of the mucous and serous membranes. It is in consequence of this that the black colour of the skin is produced, as well as its different shades which depend upon the thickness of the layer of this pigment and of that of the epidermis. It is this pigment disposed in a fine scattered layer under the epithelium which occasions the deep cherry-colour of the labial, buccal, and lingual mucous membranes, and those brownish and black spots dispersed over the whole course of the intestinal mucous membrane, as well as over the surface of the peritoneum, of the pleuræ, and of the cerebral pia mater. It is to this abundance of black pigment in the blood, which circulates in the precapillary vessels of the brain, that is to be attributed the deep, nearly brown, colour of the cortical substance which is observed not only in Negroes, but also in dark individuals of other races. So much for the pigment in Negroes in general. It is in this, so to speak, that the physiological peculiarity of this race consists.

Our individual Negro, on the contrary, offered us an exceptional impoverishment of both the one and the other variety of his physiological pigment. The presence of the yellow pigment only manifested itself in him in the blood, in the adipose tissue, in the muscles and upon the conjunctiva of the eyes, whilst all the fibrous tissues both subcutaneous and deep were perfectly white and, at the same time, dry. Likewise the black pigment

was entirely expended upon the supply of the organ privileged in this respect—the skin; so that for the epithelial teguments there only remained a very slender quantity to tinge here and there the mucous membrane of the cavity of the mouth, the pulmonary pleura, and the conjunctiva of the eyes. All the other mucous and serous membranes were in him as clear and white as in the whitest of Europeans.

This exceptional insufficiency of pigment in our Negro is easily and sufficiently explicated by the equally exceptional conditions in the midst of which he found himself and was developed from his infancy. These conditions were—aliments assuredly much less carbonised than in his own country; and our moderate climate is less active and less prolific in the production of pigment in animals in general than under the tropical heaven of Africa.*

Is there any relation of dependence between the relative impoverishment of pigment in our individual and the almost complete atrophy of his supra-renal glands? It is certainly difficult for us to reply with any probability, since even the rôle of these rarely visited organs, notwithstanding the theory formerly announced on the occasion of the famous Addison's disease, still remains a mystery in physiology. And, on the other hand, the anatomical observations of anthropologists concerning these organs in Negroes are sufficiently contradictory. Thus, Pruner-Bey in Egypt and Brown-Séquard in America have often found these capsules of a considerable size in Negroes. On the other hand, there are observations contrary to these and analogous to ours, as, for example, that of Professor Broca, who found in a Negro of fifty years of age the supra-renal capsules much atrophied.

Before concluding, it seems to us important to dwell upon a point worthy of observation in this case; that is, the quite exceptional state, as it appears, of the brain noticed in our Negro.

Without speaking of the colour of the brain, which in no way differed from that generally observed among Europeans, the cause of which we should explain by means of the relative in-

* According to this view of the writer, the proverbially indelible blackness of the Ethiopian may be modified and blanched by food and climate. This is contrary to all anthropological data, and to universal experience in all parts of the globe.—Ed. *Journ. of Anth.*

sufficiency of the pigment, what is to be remarked first is the very small quantity of the encephalic mass found in our Negro.

What is the mean normal quantity of the cerebral mass in this race? In our opinion, science is still unable to reply to this question in a perfectly exact manner. For it is a fact truly strange in anthropology, that, notwithstanding all that is within its domain, and, still more, without it, which has been discussed and published upon the intellectual inferiority of Negroes, the measure and the weight of their brain is only known in a very small number of direct observations. According to our knowledge, there are only sixteen cases of such observations,* and, among this number, scarcely one half are sufficiently exact to be utilised as scientific facts of unquestionable value. To this latter category belong the observations made lately at London and Paris, which, having added ours, we represent in the following table, stating the weights in grammes.

		Encephalon.		Cerebellum with pons Brain. Varolii and medulla oblongata.	
Peacock.....	No. 1♂, aged 21.....	1233	.....	—	..... —
	No. 2♂, aged 23.....	1289	.....	1096	..... 198
	No. 3♂, aged 24.....	1246	.....	1090	..... 168
	No. 4♂, aged 40.....	1315	.....	1143	..... 168
	No. 5♂, aged 30 ? ...	1200	.....	1060	..... 140
Broca.....	♂ ? 925	Long preserved in spirit.			
Edm. Simon	♂, aged 50	1226	With its membranes.		
Kopernicki.	♂, aged 35.....	1105	.....	955	..... 150

The comparison of these figures teaches us that our Negro possessed a quantity of brain which was a hundred grammes below the most degraded Negro of Central Africa in Dr. Peacock's series (No. 5). This degradation will become still more evident from the valuable results which the most recent anthropological researches made by the author of the *Crania Britannica*, Dr. Barnard Davis, afford. In his memoir upon the "Weight of the Brain in Different Races of Man," actually based upon indirect data, yet tolerably precise and accurate, by means of the calcu-

* These cases are the following: *a.*, two of Mascagni, cited by Pruner Bey; one of them weighed 738, the other 1587 grammes! *b.*, one of Astley Cooper, weighed 49 ounces, cited by Peacock. *c.*, two of Soemmerring (*op. cit.*, p. 57). *d.*, one of Tiedemann, long preserved at Liege (J. Barnard Davis), weighed 2 lbs. 3 oz. 2 dr. (Peacock). *e.*, seven of Peacock, five of which were male and two female; *f.*, three of Broca, Edm. Simon, and ours at Bucharest.

lation of the internal capacity of different skulls, Dr. J. B. Davis has arrived at important results, which are expressed in the following table, the weights being stated in grammes—

Races.	MALES.		FEMALES.		Differences.	Total of male and female.	Means
	No. of Skulls.	Average.	No. of Skulls.	Average.			
European..	299.....	1367.....	94.....	1204.....	163.....	393.....	1296
Asiatic.....	124.....	1304.....	86.....	1194.....	110.....	210.....	1245
African ...	53.....	1293.....	60.....	1211.....	82.....	113.....	1237
American..	52.....	1308.....	31.....	1187.....	121.....	83.....	1273
Australian.	24.....	1214.....	11.....	1111.....	103.....	35.....	1162
Oceanic ...	210.....	1319.....	95.....	1219.....	100.....	305.....	1272
Totals ...	762.....	1301.....	377.....	1188.....	113.....	1139.....	1246

As to what concerns Negroes in particular, we find in this *Memoir* of Dr. Davis that there are only two in his series, those from Congo, the most degraded, the entire encephalic mass of which would weigh in the mean one thousand one hundred and twenty-seven grammes. It is therefore scarcely to these that our Negro approached, on account of the small quantity of his brain.

Notwithstanding all this exiguity as to its mass, the conformation of the brain in our Negro did not present any of those characters which one generally considered as signs of inferiority. Over all the surface his brain, as we have already said, was covered with folds, although less profound, but as abundant, and even more abundant, than in the brain of a Wallachian woman.

In a word, it seems to us that the phrenologist of the present day, judging from his point of view, which is quite modest, and, in fact, moderate, but strictly physiological, might pronounce, not without foundation, that Nature had wronged our Negro in giving him a too limited quantity of cerebral mass; but that his cerebral organs, in consequence of his ulterior education, have acquired a certain degree of maturity and perfection, to which he could not have attained in the midst of his own people.

TABLE I.—*Measurements of the Body of the Negro, Ali Mardjan.*

	Metre.
Stature (63·2 inches English, or 5 feet 3·2 inches).....	1,610
Head—Longitudinal diameter, maximum	190
“inial” (Broca).....	188
Transverse, biparietal	145
bitemporal	123
biauricular.....	135
inferior frontal, minimum	110

	Metre.
Fronto-occipital arch, total	380
Transverse arch	335
Horizontal circumference	550
Interzygomatic diameter	116
Distance from the extremity of the middle finger to the soil	620
from the umbilicus to ditto	950
from the upper edge of pubis to ditto	820
from the raphe of perineum to ditto	760
Length of the thumb	70
the middle finger	105
Circumference of the thorax under axillæ	790
at the waist	830
Length of the foot	250

TABLE II.—*Measurements of the Skeleton of Ali Mardjan, compared with Analogous Measurements of the Twenty-one Skeletons of Negroes made by M. Pruner-Bey.*

	Ali Mardjan.	21 Negroes.
Cranium—Longitudinal diameter	181	186
Height	132	124
Transverse diameters :		
Inferior frontal	103	100
Superior „	120	113
Bitemporal	117	125
Biauricular	113	112
Biparietal	134	134
Bimastoidal	117	117
Horizontal circumference	510	511
Transverse arch	310	305
Longitudinal arch	360	355
Frontal portion	125	105
Parietal portion	120	136
Occipital portion	115	114
Face : Total length	147	123
Length of the bones of the limbs :		
Femur	427	447
Tibia	369	380
Humerus	310	312
Radius	251	246

ART. II.—THE PHYSICAL CHARACTERS OF THE AUSTRALIAN ABORIGINES.

BY C. STANILAND WAKE, Dir.A.S.L.*

I HAVE no intention in this paper of minutely considering the several points of interest presented by the physical structure of the Australian aborigines. Its object is rather, by a comparison of the data furnished by writers whose testimony is founded on personal observation, to ascertain what are the general characters of this structure, and to determine whether or not the widespread aboriginal tribes form a single race. It is not necessary for me to give any detailed account of the discovery and explorations of this peculiar country, a task which has already been efficiently performed by Mr. Major and Mr. William Howitt, and less fully by M. Dumont d'Urville. I may say, however, that Bernard della Torre was apparently the first European who is actually known to have touched the coast of Australia. This was in 1542, although the honour is usually ascribed to the owner of the Dutch ship *Le Duyfhen*, which reached the northern coast in 1606, the discovery by Luis Vaes de Torr s taking place in the same year. During the three hundred years or so that have elapsed since the voyage of Della Torre, the whole of the Australian coast has been traced, and much of the interior, especially towards the east, has been explored; although, owing to the vast extent of the country and its peculiar character, the greater part of it may be expected to long remain a sealed book to Europeans. It may, perhaps, be thought that under the circumstances, we can hardly hope to decide yet whether all the Australian tribes belong to but one race. There is some truth in this objection; but when we consider that the valuable work of Mr. Eyre has given us pretty full details as to the aborigines of Southern Australia; that Sir George Grey and Mr. Oldfield have done the same for great part of the western side of the continent; that Mr. Earle has supplied us with certain facts as to the natives of the northern coast; and that Collins and Lang have given us much information as to the aborigines of New South

* Read before the British Association for the Advancement of Science at their Liverpool meeting, 1870.

Wales and Queensland in the east; we may safely attempt to draw some general anthropological conclusions, subject only to revision, if rendered necessary by subsequent discoveries. This is the more allowable, as, thanks to the information supplied by the daring adventurers who have penetrated into the interior of the continent, and who, like Stuart and Leichardt, have actually traversed it from coast to coast, we are not without means of comparison, although these are not so perfect as we could wish, of the coast natives with those of the interior.

The first question for consideration is, whether the Australian aborigines, judging from the testimony of travellers, may be referred to but one and the same race? This question must, undoubtedly, be answered in the affirmative. Thus, Flinders remarks that the natives of a small island, visited by him, in the Gulf of Carpentaria, did not differ much in feature from their countrymen on the southern and eastern coasts. Captain King says that a native, who was captured off Lewis Island, was "a perfect *fac-simile* of the inhabitants of the eastern coast." So Commander Stokes asserts that a man of Arnhemland, in the north, had the overhanging brow which is so remarkable a peculiarity of the Australian aborigines. This feature, with others equally characteristic, such as the large flat nose, full lips, and wide mouth, is presented by all the natives of the west coast between Roebuck Bay and Port George IV, a distance of about 200 miles. If we turn to the south-west coast we find that, according to Captain King, the natives there are, "in most respects, very similar to their neighbours," a remark in which he perfectly agrees with the French traveller, Péron. Flinders still further extended this comparison, and said that he was surprised to find so great a resemblance between the aborigines at King George's Sound and those of the east-coast of New South Wales—their colour, the texture of the hair, and their personal appearance being the same. This traveller compared, moreover, the natives of Port Lincoln with those at Port Phillip on the south coast, and he says that "they differ in no essential particular from the other inhabitants of the south and east coasts." The same opinion was evidently entertained by M. Dumont d'Urville, who visited King George's Sound and Jervis Bay; while Captain Cook appears to have found no difference in the natives throughout the whole eastern coast, a distance of upwards of two thousand miles. The

description given by Collins of the natives of Port Jackson, in New South Wales, would almost do for those seen by Stokes at Roebuck Bay, in the north-west. Again, Captain King remarks that "the tall, slender form of the Port Jackson natives, and their other peculiarities of long curly hair, large heads, and spare limbs, are equally developed," in the inhabitants of the country near the Bowen River, in Queensland. If we come round again to the extreme north, we find Mr. Earle stating that certain features were possessed in common by all the tribes with which he was acquainted in the neighbourhood of Port Essington, while these northern Australians possessed many of the general characteristics of the tribes of the south. Major Campbell says positively that the inhabitants of Melville and Bathurst Islands, not far from Port Essington, are of the same race as the aborigines throughout Australia, although, he adds, they are more athletic, active, and enterprising, than the natives he saw on the southern coast, at Port Jackson, Newcastle, or Hunter's River. I may remark that, on my showing the figures of the North Australians, given in Mr. Earle's volume, to a gentleman who had lived many years in Western Australia, he at once recognised their resemblance to the natives of the latter part of the continent. The characters presented by the aborigines of the interior have the same general feature. Mr. Barron Field asserts that the natives of Bathurst, west of the Blue Mountains, resembled those of the east coast in appearance. Captain Sturt met with a remarkably fine tribe at Cooper's Creek, in the north-eastern part of South Australia, "without the unseemly protrusion of stomach so common among the generality of natives." There is nothing to show, however, that they were not in general appearance the same as the other aboriginal Australians, and as to their women, indeed, Sturt says that they were "the same half-starved, unhappy-looking creatures," whose condition he had so often pitied elsewhere. Of the neighbouring tribes, moreover, Sturt declares, that they resemble in their peculiarities, not only those of the Darling and the Murray, but also the aborigines of the whole continent. If we pass further north, we find M'Kinlay saying that the natives of the Leichardt River, towards Port Denison, were of the ordinary stamp; and, although certain minor differences were observable among the tribes met with by Leichardt in his journey from Morton Bay to Port Essington, yet all seem to have been much the same in appearance. This may,

with one exception, he said, also, of all natives met with by Mr. Stuart in his explorations of Central Australia, and his journey across the continent. This exception is furnished by the presence, about 3 deg. north of the central point of the continent, of a tribe of whom Stuart says "they have quite a different cast of features from those in the south; they have neither the broad, flat noses and large mouth, nor the projecting eyebrows, but have more of the Malay" (p. 220). It is strange that a tribe so different from all others, as these appear to be, should be thus isolated—as the natives, seen as well farther north as more to the south, were evidently of the ordinary type—and their special Malay affinity must be accepted with reserve until they have been more fully described. It is true that individuals have occasionally been met with by other travellers, who, in their light colour and other peculiarities, have been thought to show the presence of Malay blood. These cases have been rare, however, and there is no real reason why they should be ascribed to a foreign source.

Mr. Eyre, who is one of the best authorities on questions relating to the Australian aborigines, asserts that all the natives with whom Europeans have come into contact are strikingly similar, and I cannot do better than give the description of their appearance furnished by him. He says that the *male* is "well-built and muscular, averaging from five to six feet in height, with proportionate upper and lower extremities. The anterior lobes of the brain are fairly developed, so as to give a facial angle, far from being one of the most acute to be found amongst the black races. The eyes are sunk, the nose is flattened, and the mouth wide. The lips are rather thick, and the teeth, generally, very perfect and beautiful, though the dental arrangement is sometimes singular, as no difference exists in many between the incisor and canine teeth. The neck is short, and sometimes thick, and the heel resembles that of Europeans. The ankles and wrists are frequently small, as are also the hands and feet. The latter are well formed and expanded, but the calves of the legs are generally deficient. Some of the natives in the upper districts of the Murray, are, however, well formed in this respect. In a few instances natives attain to a considerable corpulence. The men have fine broad and deep chests, indicating great bodily strength, and are remarkably erect and upright in their carriage, with much

natural grace and dignity of demeanour. The eye is generally large, black, and expressive, with the eyelashes long. (Vol. i., p. 206.) Of the *female*, Mr. Eyre says, "the average height is about five feet, or perhaps a little under. The anterior part of the brain is more limited than in the male; the apex of the head is carried further back; the facial angle is more acute; and the extremities are more attenuated. Occasionally, though rarely, I have met with females in the bloom of youth, whose well-proportioned limbs and symmetry of figure might have formed a model for the sculptor's chisel. In personal appearance the females are, except in early youth, very far inferior to the men. When young, however, they are not uninteresting. The jet black eyes, shaded by their long dark lashes, and the delicate and severely formed features of incipient womanhood, give a soft and pleasing expression to the countenance, that might often be called good-looking—occasionally even pretty. The colour of the skin, both in the male and female, is generally black, or very darkly tinged. The hair is either straight or curly, but never approaching to the woolliness of the negro" (p. 208). Mr. Eyre adds, as to the hair, that "when washed and purified, it is very abundant and beautiful in appearance, it being a silken, glossy, and curly black." Before considering certain particular characters, this description may be supplemented by that furnished us by Count Strzelecki, although this latter relates more especially to the natives of New South Wales. After referring to their stature (which he makes lower than the average given by Mr. Eyre—from four and a half to five and a half feet), trunk and limbs, and stating that, in some instances, the whole body is covered with hair, Strzelecki goes on to say that, the face "presents a facial angle of between 75 deg. and 85 deg. It is marked by a low forehead, eyes large, far apart, and half covered by the upper lid, with a conjunctiva of the purest white spotted with yellow; the iris invariably a dark brown, the pupil large and of a jet black; a nose broad and flat, the frontal sinuses being remarkably prominent, the nostrils extending and wide-spread; the cheeks generally hollow, with prominent malar bones; a wide mouth, with large white teeth, and thick lips; the lower jaw unusually short and widely expanded anteriorly." (p. 334.) He adds that, "the stature of the women is low, the head short, and the features masculine; the mammæ,

instead of being hemispherical, are, in marriageable persons, pyri-form, and soon after marriage become flaccid and elongated. The arms are slender; the hands small; the pelvis unusually narrow; the lower extremities slight, straight, and lean; the foot large, flat, and invariably turned inwards." (p. 335.)

This description, while agreeing on the whole with that given by Mr. Eyre, adds certain characters to those mentioned by him. The most striking of these is the shortness of the lower jaw, which is referred to also by Sherzer, in his narrative of the voyage of the *Novara* frigate (vol. iii, p. 61), and which is probably intended by the contraction of the lower part of the face, mentioned by Major Campbell. (See *infra*.) The above descriptions of the physical appearance of the Australian natives is not applicable in each particular to every tribe. I have already referred to the Hayward Creek tribe, of the interior, who are said, by Stuart, not to have the broad flat nose, and large mouth, usually seen among the natives, nor yet their projecting eyebrows. Again, the natives of the north and west coasts, and those also of the central part of the continent, are usually described as being tall—often more than six feet high—while those on the south and east coasts are said to be of middle height, although generally robust and muscular. According to Commander Stokes, however, the aborigines of the north-west coast are not more than from five feet five inches to five feet nine inches in height, and it is possible that the same mistake, in relation to height, has been made by Australian travellers as was committed by the early navigators, who declared that the Patagonians were seven feet high. Mr. Stuart, indeed, says that a man seen near the Chambers River, in the interior, was seven feet high; while, near the source of the Adelaide River, still further north, he met with natives who were "the smallest and most miserable race of men" he had ever seen, they being only about five feet in height. Sturt made a similar remark of men he saw near Flood's Creek, west of Lake Blanche. The aborigines at the spot, in the north-east, where Cook's ship went ashore, were also of small build, and about five feet high. It would seem that peculiar circumstances occasionally favour this increase or decrease in height, but most probably what Major Campbell remarked as to the natives of Melville Island is true, as a rule, of all the aboriginal tribes of the continent. He says—"They are not generally tall in stature, nor are they, when numbers are

seen together, remarkable for small men. In groups of thirty, I have seen five or six strong powerful men of six feet in height, and some as low as five feet four inches and five. There are certain peculiarities about the Melville Islanders, who are yet declared, by Major Campbell, to resemble the Australian natives in general appearance, and it may be well to quote the description of the former given by this writer. He says that they "are well formed about the body and thighs; but their legs are small in proportion, and their feet very large; their heads are flat and broad, with low foreheads and the back of the head projects very much; their hair is strong, like horsehair, thick, curly, or frizzled, and jet black; their eyebrows and cheek-bones are extremely prominent, —eyes small, sunk, very bright and keen; nose flat and short, the upper lip thick and projecting; mouth remarkably large, with regular, fine, white teeth; chin small, and face much contracted at bottom. . . . The colour of their skin is rusty black."* In these natives we have the prominent forehead or brows, and the contraction of the lower jaw, with the broad and flattened nose and wide mouth, which are possessed by the aborigines of the continental area. The disproportion between the trunk and the lower limbs and the large size of the feet do not agree with the description of the South Australians given by Mr. Eyre, although the former peculiarity is undoubtedly found among some natives of the continent,† and the latter is mentioned by Strzelecki.

The most curious fact to be noted in the description of the Melville Islanders is the character of their hair, which is said to be "strong, like horsehair, thick, curly, or frizzled." In confirmation of the statement that these natives have frizzled hair, I may cite Mr. Earle, who says expressly that hair of this description "is very common among several of the aboriginal Australian tribes, more especially those of the north and north-east coasts," although he adds that this is different from the woolly hair of the negro. (P. 189.) Commander Stokes moreover asserts that the natives at Port Essington have crisp hair, and he says the same of the Clarence Strait natives. Dampier makes this remark also as to the inhabitants of the mainland off Dampier's Archipelago,

* Earle's *Papuans*, p. 199.

† Captain Sturt refers to this peculiarity, in his description of the desert tribes near Cooper's Creek, whom, in general appearance, he describes as agreeing with "the aborigines of the whole continent". (Vol. ii, p. 135.)

and Freycinet confirms the observation. More strangely, however, Sir Thomas Mitchell met with the same kind of hair, apparently, in East Australia, on the Bogan River. He says, as to a tribe here, it presented a greater variety of feature and complexion than he had ever seen in aboriginal natives before; "most of them had straight brown hair, but others had Asiatic features much resembling Hindoos, with a sort of woolly hair."* Perhaps to the same category belong the women with black skins and long glossy ringlets, met with by some travellers in the interior. Sturt saw a woman of this description north-west from Lake Torrens, and he says that her companions, who appeared to be of a different race, evidently had no liking for her. This forms a great contrast to the men seen by Stuart near the Hanson, in the centre of the continent, whose heads either had no hair at all or it was quite short, as though it had been burnt off close to the skin. This may, however, not have been a natural condition. In relation to the question of hair-form it may be worth referring to the fact mentioned by Stuart, that in the hot, dry climate of the interior the human hair and the wool of the sheep alike cease to grow, a fact from which, perhaps, an explanation may be derived of the frizzled hair of the north-western natives, which is only an intermediate stage to the so-called woolly or wiry hair of the Papuan and Tasmanian. I will leave this part of the subject by remarking that, on the Darling River, Sir Thomas Mitchell met with a native whose features were decidedly Jewish, and who had a thin aquiline nose and a very piercing eye. Probably this was a refinement of the Papuan type, which is often said to be somewhat Semitic. It is noticeable that, according to some writers, the aquiline is the natural form of the native Australian nose. This is affirmed by Wilkes, who says that the depression of the nose at the upper part, and its width below, are due to the action of the mother during the child's infancy, and, therefore, that they are artificial deformities.

I have said little about the form of the Australian skull for several reasons. It is deserving of separate treatment; if, indeed, the data for its determination are yet sufficient

* *Three Expeditions, etc.*, vol. i, p. 213. It is not impossible, although hardly probable, that these were continental importations, as individuals answering this description would seem to be not uncommon among the aboriginal tribes of Western India. (See Pickering, *Races of Man* (Bohn), p. 135.)

to enable a satisfactory conclusion to be arrived at as to the general skull form of the aborigines. Two facts, however, seem to be pretty well determined ; these are, that the Australian skull, like that of the dark races generally, is *dolichocephalic*, and that the forehead, owing in great measure to the prominence of the frontal sinuses, is often well developed. This, with the smaller protrusion of the jaws, generally results in a profile much less animal than that usually associated with the West African native. I may add, that the average measurement of fifteen Australian skulls, described by Dr. J. Barnard Davis, in his *Thesaurus Craniorum*, gives an interval capacity of 65·1 ounces (avoirdupois), the smallest of the skulls having a capacity of only 59; while the largest was as high as 86. It should be stated that the skull of the native Australian female is very inferior in form to that of the male, approaching much more nearly to the animal type. Whether or not but one form of skull is found through the whole of the continent can hardly yet be determined. My friend, Dr. C. Carter Blake, assured me that the skull of the Moreton Bay natives are of a peculiar type, having the crown more depressed, while the frontal sinuses are not so prominent as in the ordinary Australian skull ; and Professor Busk appears to be of the same opinion. Whether this difference is general may perhaps be doubted,* but it can hardly disturb the conclusion already stated, that the Australian skull is *dolichocephalic*.

In conclusion—the most striking peculiarities presented by the physical characters of the Australian aborigines are, first, the great prominence of the brow ; secondly, the contraction of the lower jaw ; thirdly, the wide expansion of the nostrils, combined with great depression of the nose at the base ; fourthly, the extreme width of the mouth ; fifthly, the absence, sometimes observable, of any difference in form between the incisor and canine teeth ; sixthly, the straightness and silkiness of the hair, with certain exceptions ; seventhly, the hairiness, in some cases, of the entire body. This last character is expressly mentioned by the Austrian naturalist, Sherzer, and is referred to by Wilkes (see vol. ii, p. 185) and other writers.

* May it not result from artificial deformation ? Dr. J. Barnard Davis says that the influence of artificial interference “ must be very considerable, and it must be an element of far more weight and importance than craniologists have hitherto esteemed it to be ” (*op. cit.*, p. 315).

ART. III.—ON THE DIFFERENCE IN THE CRANIAL
STRUCTURE OF THE GORILLA, CHIMPANZEE,
AND ORANG-OUTANG,

WITH SPECIAL REFERENCE TO SEX AND AGE, AND WITH SOME
REMARKS ON THE DARWINIAN THEORY.*

By TH. L. W. BISCHOFF. Munich, 1864. (Reviewed by L. RÜTIMEYER.)

SINCE the famous "finding out" of the cranial vertebræ by Oken and Goethe, which caused such a feud between these, as well as between Cuvier and Geoffroy St. Hilaire, and divided naturalists into two hostile camps, until the history of development acted as a mediator, there has not been an event which caused so much excitement, especially in England, and gave rise to such personal discussions even among the general reading public, as the re-discovery of the gorilla; and for very obvious reasons. On both occasions the subject involved the relations between matter and mind, between the perishable and imperishable. But whilst the French Academy silenced for a time the old contest raised by Duméril almost simultaneously with Oken by the nickname *Vertèbre pensante*, the jeers and scoffs of the opposed parties in the present contention still continue. On neither occasion was the contest carried on for the benefit of science. And less so in the latter, because the scientific examination of the gorilla coincided with pregnant events which rendered it doubly important, namely, with the appearance of a work *On the Origin of Species*, and with the resumption of the study of anthropological anatomy. We have little doubt but future historians will envy us, who have lived in a period during which so many rays of light fell upon a spot which will ever remain for man a central point for his most difficult questions. The general public, with their instinctive tact, felt this, and the future historian will find the evidence of it in the present non-scientific literature. But, how will they judge us, who find our-

* Bischoff, Th. L. W. *Ueber die Verschiedenheit in der Schädelbildung des Gorilla, Chimpanse, und Orang-Outang, vorzüglich nach Geschlecht und Alter, nebst einer Bemerkung über die Darwin'sche Theorie.* München, 1867. Rec. von Rüttimeyer. Translated from the third and concluding part of *Archiv für Anthropologie*, 1868.

selves in the presence of such an unexpected light, conscious as we are, that the greater portion of the public places the sword of justice into our hands, confidently expecting the verdict of natural science? The mode in which this contest is carried on in England will certainly not furnish a testimonial in our favour. So much the more should it be the mission of serious journals, such as the anthropological archives claim to be, to stand up for an impartial but dispassionate, for a candid but a severe critique of the treatment of such serious problems.

So long an introduction to so short an article on the above work may seem superfluous, the more so as the reviewer is not in a condition to compare it with desirable completeness as regards method and results, with earlier partly inaccessible works; and he labours under another difficulty, as he possesses but scanty materials practically to verify the criticised work. The preceding remarks may, nevertheless, here and there calm down unseemly passions, and not only excuse but strengthen many a hard word here said, touching the work of so eminent an inquirer in many well-known fields of science.

The above work is distinguished above all others which treated of anthropoid apes by the abundance and completeness of its materials. Fifty-five crania of male and female, old and young specimens of the gorilla, the chimpanzee, and orang-outang (gorilla, old males, 2; old females 3; young, 3. Chimpanzee, old males, 2; old females, 7; young, 4. Orang, old males, 7; old females, 12; young skulls, 15). Materials so rich, as regards the most important animals, have never been at the disposal of one and the same naturalist. But such wealth imposes obligations—first, to start from the performances of predecessors, and, secondly, to achieve more than they have done. We must leave it to the judgment of those better acquainted with the earlier literature, and with modern labours in this field, how far the above expectation has been realised. For our own part we have the following strictures to offer: although a number of earlier works, such as those of Vrolik, Wyman, Owen, Duvernoy, are mentioned in the introduction, and here and there in the work, we find nowhere that they have been used as a basis, although they might have been of great service as supporting the new investigation. The book of Lucae is also occasionally mentioned; but in a work which manifestly claims to exhaust the subject for a considerable time

to come, we must express our surprise that so many treatises, such as those of Van der Hoeven, Dumortier, Heusinger, Werner, Harlan, Wormb, as well as the older writings of A. Wagner and Cuvier, although they only partially treat of the new subject, have been perfectly ignored.

As regards the new achievements of Bischoff we may, perhaps, excuse that one part of the investigation, namely, the examination of the interior of the skull, with all its consequences in relation to the form, volume, and growth of the cranium, has been completely set aside; nor is any mention whatever made of the literature on this subject from the time of Tiedemann to that of Gratiolet. No doubt, entrusted crania cannot well be sawn through; but Herr Bischoff would have been entitled to our thanks if he had resolved to show us not merely the shell but also the kernel of the Munich skulls, by which their value would have been doubled. Comparisons with the cranial and cerebral structure of man have thereby been rendered impossible, so that it seems as if this part of the inquiry, which was to be the final result, had been purposely withheld. Even if we consider it as a purely zoological work, and take the postscript to be an appendix, added for the occasion, the zoologist must still say, that so rare a collection of almost inaccessible materials as that at Munich, has yielded much fewer results than we had a right to expect.

We are all aware that at present new objects should not be described without annexed drawings, and that, as a rule, the latter are of more service to the student than the text, which is always but a poor compensation for ocular inspection. Even in the work of Bischoff, which captivates us at once by the richness of the atlas compared with the poverty of the text; we, as well as the author, consider the atlas as the main part. We do not here advert to the arrangement of the plates, which has been justly but too angrily censured by a reviewer in *Zarnke's Centralblatt*, No. 19. Although in library copies, which must be bound, the triple repetition of the family renders the comparison of the plates sufficiently difficult, it is nothing compared to that caused by a similar arrangement of the text. Moreover, every private possessor of the atlas may, for comparison, leave the plates unbound. One, or better, three collective leaves, with accurate geometrically drawn mere outlines, or in Camper's vigorous manner, reduced sketches of the different cranial views, would, at the very least, have doubled the usefulness of the atlas.

There are, however, graver objections. Notwithstanding that the atlas abounds with instruction, for which we ought to feel grateful, yet the information seems to be given unconsciously rather than intentionally. Although some praise is due both to the lithographer and the photographer, yet no one acquainted with osseous surfaces can deny that, as regards individual accuracy and character, the portraits given are far inferior to those by Erxleben in Owen's works. How dull and vapid the insertions of the muscles, how dead, especially the lower jaw. All these drawings seem rather copies from bad gypsum models than drawn from nature. We must not, however, forget that the designer acts generally according to his instructions, and that his employer declared himself satisfied. But there is a strong presumption that the designer had pretty nearly *carte blanche*, not merely as regards the execution of the drawings but also as to the position of the skulls. And herein lies, in our opinion, the gravamen for the adjudgment of the whole work. After the prolix contentions which were carried on before and after the discussion at Göttingen, on the position of skulls in drawings; in the face of a literature which treats of this subject since old Camper, and of the weighty preliminary considerations urged by Nathusius, in his excellent work on animal skulls, we must express the utmost surprise that the reader learns absolutely nothing touching the perspective and geometrical principles, so that it seems as if none were followed. It is probably by accident that the views of the cranial basis are better executed, although we may ask ourselves what influence this or that inclination of the skull might have exercised upon the form of the aperture of the choanæ, the outlines of the mastoid region, and the length of the palate. The profile position, the most easily arranged, is handled with singular carelessness, of which fig. 4, 5, and 28, are instructive examples, not merely as regards the nasal aperture, but also with reference to the more or less of what is shown of the occiput. All these points, which in views "in natural size," and where the student is referred to his own measurements, are of great importance, especially as the text is very sparing of indications. And, above all, the portraits of the facial side! Owen, also, gives no explanation as regards the principles followed in his portraits; but every one sees at once that the palatal, or masticating surface of the teeth was placed horizontally. In Bischoff's portraits it is purely impossible to

set one's self right; for we obtain the impression that no skull is exactly placed like another (compare, for example, fig. 2 and 11, chimpanzee, male and female, whose cranial axis differs considerably in inclination). And the circumstance that the lower jaw offers no rational stand cannot serve as an excuse, for it is generally objectionable to represent skulls with annexed lower jaws. The consequence is that we nowhere, in such inaccessible objects, obtain a side view of the pterygoid portion, and, what almost sounds incredible, there is not a single representation of the mandibular teeth, just as the views of the maxillary teeth from the masticating surface are, in consequence of the steep cranial position, perspectively quite distorted, so that the dentition as a whole, despite all the costliness of the representation, is, with exception perhaps of the canine teeth, lost to the observer. The disregard of previous labours, and of the progress of science in general, shown in the arrangement of the delineations, is rendered still more evident in the measurement tables of the text. We are left in ignorance, not merely in reference to the individual skulls which have been portrayed or measured, but we become, on the contrary, convinced by re-measurement, that very frequently other skulls than those measured are delineated. And not merely are the measurements of about forty skulls withheld, and averages slighted, but we only receive for the male and female of each species eight measurements, equally divided between the pregnant and significant skull with four measurements, and the comparatively sterile and insignificant lower jaw, also with four measurements. We fully admit that the cranial measurements are very usefully selected, and will retain their value. But were succeeding inquirers not entitled to expect a little more from such a curious collection? And has the whole literature of cranial measurements since Blumenbach, as regards man, and since Camper and Cuvier, as regards animals, not enabled Herr Bischoff to obtain greater results from so rare an opportunity? Where, if not here, was the proper place for discussing the principles of cranial measurements in general, than on a subject which in youth is anthropoid, but acquires, with advancing age, excessive muscular cristæ and pneumatic tumefactions of the bones, of which there scarcely exists another instance. Sobriety in the representation and concentration of the results of observation are, no doubt, very praiseworthy qualities in descriptive natural

science; but surely we do not judge unfairly in lamenting that Bischoff almost entirely kept for himself the gain of his, no doubt, careful researches, and dismisses his readers with the crumbs from his abundantly supplied table. As regards measurements, even old Daubenton, though much groping in the dark with his compasses, has yet rendered more service to his successors than Herr Bischoff, with materials to the proper utilisation of which the scientific world looked forward with such intense interest. With, say but one table, and only four measurements of the skull, even putting aside the lower jaw, carried out in *all fifty-five* crania, which were at his disposal, science would have profited more than with the numerous groups which he scattered in the book. To work upon it, which must be the primary requisition of scientific publications, is here rendered all but impossible.

We may rapidly dispatch the rest of the text. The fatigue which seizes the reader on perusing the repetition of twelve chapters, is much greater than the inspection of the tables. Still, the text contains many important points; but it requires discrimination to search for and to collect them. How much might we not have learned if Herr Bischoff had resolved first to teach us from his rich materials, the laws of development and growth of the ape-skull in the same way as Nathusius has done for swine, and if we had learned how the cerebral capsule *per se*, and how the facial skull become developed with advancing years: how further the relations between these two parts of the skull, which manifestly do not proceed *pari passu*, are established in time, and finally what influence the growth of the muscles and the dentition, and the development of the cavities for the senses, exercise upon these relations. It would have been much easier, with a less disavowance of the task, to form a definitive opinion on the three species; this, in point of fact, is withheld from the reader, or can only be picked out by him with great labour, and is the more to be regretted, as some of the results obtained are of great importance. I do not think that hitherto the great difference which demarcates the Asiatic from the two African species, has been rendered so evident as in Bischoff's work. It is perfectly demonstrated that the orang from his youth to advanced age represents a strictly brachycephalic, whilst the two African species represent a decided dolichocephalic simious type.*

* Professor Deslongschamps, of Caen, when investigating the crania of

Although the orang finally rivals the gorilla as regards the development of the muscular cristæ, still, in consequence of the more brutal development of his front teeth, his small round eyes retained within the cerebral capsule, his small nasal bones in the adult state, he appears a much more brutal animal, and more removed from man than the two Africans, of whom the chimpanzee unquestionably occupies the higher place, because he preserves during his whole life more of his youthful form, and also excels the gorilla in the development of his fore-and-hind brain. His nasal cavity is also more spacious, despite the small narrow aperture of the choanæ, which seems to be characteristic in the chimpanzee. How very instructive, generally, is the impression produced by the study of the plates, namely, that all these apes, and, singular enough, more so the Asiatic, who finally lags so far behind, take at the outset a mighty start towards a higher development, which is, however, arrested by material cares for the acquisition of their daily bread, and especially with the awakening of the sexual instinct for the propagation of the species. It seems as if the bitter struggle for existence both as regards the individual and the species with reference to food and propagation, had blighted the hopes of early promises; and we are tempted to ask what might not have become of the heads in Plate xx, and especially of Plate xxii, if the struggle had not been merely for existence, but for progressive development. Has not every anatomist who is acquainted with human crania, or have not all of us frequently seen members of our own species who (and assuredly in many cases owing to the bitter struggle for existence) have started from a higher scale than the orang, and yet at the end of life arrived just where the orang (Table xxii) commenced? How clearly do these plates prove that this struggle for existence, no doubt improves the animal qualities of organic life, strengthens the muscles, develops the senses; but when it is too severe it does so at the expense of the brain, and that this struggle could scarcely be perpetuated if there did not exist an inexhaustible source of unknown origin, which provides youth again and again with the means of recommencing the race, and finally to excel the parents. Must not

gorillas and orangs, of early youth, affords evidence which, however, bears strongly against this theory, and shows that, in the young gorilla and the young orang, the proportions are precisely equal.—*Ed. Journ. of Anth.*

every one who compares fig. 27 with fig. 3, or fig. 28 with fig. 6, mournfully exclaim, "What has become of thee?" And may he not sorrowfully remember what he himself possessed of genuine creative poetical fancy in childhood when the struggle for existence was yet unknown to him. There must, therefore—and here is the place to express it—there must, to this struggle for existence, the effect of which no one doubts, be something added, something which obtains the victory over it—a forward impulse, a hidden spring, which impels all creation *per aspera ad astra*.

As regards the two African species between themselves, it appears to me that some lessons may be learned from Bischoff's plates, which were well worthy of being touched upon in the text. They present us—and would that there had been more of them, especially of the intermediate ages between young and old—with a kind of biography of the two species. The starting-point for both (Tab. XIX-XXI) is surprisingly similar; although some trifling differences, such as the lesser expansion of the olfactory canal, *i.e.*, less extension of the nasal bones, and smaller circumference of the choanæ, are already perceptible in the chimpanzee. The fore-brain is perhaps more developed, and the visual organ is already at an early period planned larger, whilst the hind-brain seems to predominate in the gorilla, in which also the dental apparatus is laid down on a stronger plan; hence the facial part of the skull is large, the roots of the teeth and the alveoli large, the jaws high. It is already seen that he has a harder struggle before him than the chimpanzee. And certainly how different is the end (Tab. I, II, XXI). And yet the great affinity between them is still unmistakable. Even then the forebrain predominates in the chimpanzee, the hind-brain in the orang (See fig. 4, 5, 13, and 16), and the former preserves a more open eye (Fig. 2, 1, 11, and 10). It seems that a different alim-entation was assigned to these two species. Thus we see that in the gorilla the molar mastication predominates, as shown in fig. 9 and 16, which is rendered still more manifest by the enormous development of the crests for the temporal and cervical muscles, and from the strength of the zygomatic arch (Fig. 4, 5, and 13, 16) and the extent and depth of the pterygoid fossæ. The chimpanzee seems more designed to use his incisors and canine teeth, whilst the molars visibly decrease in size backwards (compare fig. 8, 7, and 17, 16; we much miss here the for-

gotten delineation of the mandibular teeth). Hence the coarse muzzle with broad projecting canine alveoli (Fig. 2, 1, and 12, 11), the large suborbital grooves, in contrast to the low maxilla and mandibula, and the oblique and weak ramus ascendens of the latter (Fig. 5, 4, and 14, 13); whilst the orang combines the masticating instruments of both, and possesses besides a very odd *additamentum* in the uncommon expansion of the laminae externae of the pterygoid fossae (Fig. 18, 19, and specially fig. 9).

To the conditions just described may be owing the important circumstance that the sexual difference is greatest in the orang, less so in the gorilla, and least of all in the chimpanzee; it thus rises and falls with the difficulty of the struggle for existence. The more mechanical the task, the more material the existence, the more succumbs in the male, to whom is assigned the preservation of the species, the final object of the genus, namely, psychological development. A comparison of fig. 15, 6, and 12, 3, with 13, 4, and 10, 1, as well as with 14, 5, and 11, 2, leaves no doubt as to this pregnant theory. Bischoff's plates of apes confirm an observation which passed like a red thread through my long-continued studies of ruminants. And does not our own experience tell us that woman remains through her whole life nearer the youthful condition, and is bodily the conservative element of the married couple. In this respect she forms, for the preservation of the scale of society, a more secure basis than the male, when he is oppressed by want or passion.

Nevertheless the comparison of fig. 14, and 5, shows that the male chimpanzee, despite his stronger front teeth and his thicker and steeper *ramus ascendens mandibulae*, outstrips the female in respect to his cerebral capsule, no doubt, perhaps, because he has to incur an easier struggle for existence than the gorilla and orang. The male chimpanzee is also in advance of the otherwise more favourably conditioned females of the gorilla and orang (Fig. 5, 13, 15, and Fig. 2, 10, 12; Fig. 2 and 11 are unfortunately not comparable, as they are differently arranged).

Bischoff's tables also shed some light beyond the limits to which he has confined himself. The resemblance of the young skulls of the two African species to the *Cynocephali*, and that of the young Asiatic to *Homo*, is unmistakeable, although the former is somewhat masked by the tube-like projection of the orbits, and the overshadowing of the same by the supercilia and

the stretched head; and the latter, namely, the resemblance of orang to man by the projecting teeth and the depressed nasal cavity almost without a nasal roof, still the widely-opened eyes are at that time beautifully placed under the dominion and guardianship of the brain. Let us hope that others may soon cultivate this field with materials as rich as were at the disposal of Bischoff.

The postscript of Bischoff, "Remarks on Darwin's Theory," produces the impression that it was intended to supplement certain points which had been neglected in the text. His more polemical than real treatment of the subject cannot be made the subject of a critique. Those points of the Darwinian theory which Bischoff accentuates cannot be discussed by an adherent not less enthusiastic for this theory than Herr Bischoff professes to be, inasmuch as the undersigned differently conceives the same points. I am, moreover, of opinion that the manifold abstractions which the pregnant work of Darwin gave origin to, constitute a very proper subject for verbal, but a very improper one for public discussion. Darwin's doctrines appear to me as a kind of religion for the naturalist, which may be adopted or rejected; but as is well known, it is bad disputing on matters of faith; neither do I expect that much will come of it in the present case. We can be scarcely mistaken in believing that had it been possible, Darwin would have addressed his book only to such persons as would have received it in the same spirit as he presented it.

There is one point only of the section on Darwin which I take the liberty to touch upon, namely, the chapter on the quantitative or qualitative difference between the psychical life of animals and man. I cannot refrain from confessing that I am more inclined to adhere to the views of old Huber than to those of Bischoff. Huber, on being questioned touching the instinct of bees, replied, that we shall not be able to understand this impulse until it shall be possible for us, without any loss of our own power of thought, to transform ourselves for a time into a bee or wasp, and consciously participate in their labours.

ART. IV.—THE SHADOWS OF GENIUS.*

BY WALTER C. DENDY, Esq., F.A.S.L.

ONE of the pet studies of Anthropology is that of Craniometry ; the shelves of our museums are loaded with skulls of every form and fashion ; and the Neanderthal, the Engis, and a dozen other cranial monstrosities, have been the nine days' wonder of every ethnological arena, as the *missing link* that was to decide the grave question of transmutation and affinity.

The varieties of crania, arranged in a comparative series, and illustrated by faithful record, are, doubtless, of great value ; yet the mensuration of Retzius and Camper have, I think, been too often deemed oracular or absolutely indicative of the qualities of that precious mass once lodged within the cranial cavity.

We cannot contemplate the phenomena of intellect without an ardent desire to study the physiology of that mysterious element which we believe to constitute the medium of its exposition. The science of the brain is, indeed, the most important study in anthropology. I do not allude to the fanciful dogmas which dimmed the philosophy of Spurzheim, but to those principles of physiology which elucidate, by induction, the phenomena of intellectual nature. It is a study without which anthropology cannot be perfect : the skeleton without the science of life and mind were as senseless and as barren as the idol that glares within the topes and temples of ancient Hindustan.

The proximate source of the element of intellect must ever be left by the physiologist in mystery. The most learned disquisitions both of divines and metaphysicians, are ever marked by the conventional character of their special thought and contemplation on this momentous question. It is, therefore, more consonant with the precepts of religion and philosophy, to repose in the belief of a primal causation, which all may venerate, without presuming to offer any positive definition.

We may, yet, regard the brain as the exponent of that mysterious element which inspired Shakespeare to create new worlds of fancy ; Milton to "presume an earthly guest" into Paradise and Pandemonium ; Herschel to bring down the stars of Heaven ; Wollaston, Davy, and Faraday to play their splendid tricks with gases and metals ; Telford and Stephenson to subjugate the

* Read before the meeting of the British Association, held at Liverpool, 1870 (Department of Ethnology and Anthropology).

laws of mechanics to their will; and Newton to demonstrate the ruling principle of the universe.

It is in its state of *unhealth*, however, when, from the influence of intense thought—when, from excitement or depression, the shadows have closed around it, and mighty intellect becomes

“Like sweet bells jangled, out of tune and harsh”,

that the study of brain becomes yet more deeply interesting.

It is these eccentric derangements that so often bewilder the reflection of philosophy, and so completely blight the inductions of our deepest ethnic study. Thus influenced, the children of genius seem to form one special genus of their own, which we have distinguished by the soubriquet of *genus irritabile*, and it is of this psychopathology, the *night* side of intellectual nature, that I have presumed to write. Adapting, for a moment, the minute analysis of brain, we may define intellect or the mind to be a combination of faculties and their sympathy with the senses, and we may believe that each of these faculties may have its seat in some minute and separate cell of the medullary tissue of the brain. We may believe, also, that if one of these cells (in an otherwise healthy brain) be disordered, the function of that cell will be deranged, and will manifest the form of intellectual monomania termed *folie raisonnante*, the madness of one idea.

In illustration I may cite the man of high intelligence introduced to Lord Eldon as the subject for a commission *de lunatico inquirendo*. So charmed, however, was the chancellor with his intellectual brilliancy, as to express his indignant reproof of the accusation that he believed the Queen was deeply enamoured of him. “And how dare you doubt it?” the visitor exclaimed in a tone of intense excitement. The writ was directly issued. A young officer, a patient of my own, had hoodwinked for many hours twenty-four wise and special jurymen, who were at length about to quash the imputation of insanity, when the officer drew a paper from his pocket, and, with melodious solemnity, chanted the ballad of “Home, Sweet Home,” *composed by him for their special enjoyment*. The verdict of insanity was directly recorded.

On the contrary, there may be a mass of softened brain, one cell or a group of cells being still in a state of health and functional integrity. Such was the state of an architect of high talent confined in a lunatic hospital; yet from whose elaborate designs, drawn during his detention, a new and noble asylum

was constructed. I know not how otherwise to explain these anomalous manifestations of mind.

In that passive form of aberration—*mental abstraction*—we may believe that if one cell be the seat of intense and concentrated thought, intellect may be so absolutely absorbed in its own *conception*, that impression of a sense may completely fail in imparting the *perception* of an object to the sensuous ganglion. In proof, we may remember the stories of Pliny and Archimedes, and Parmegiano, and Newton, and a host of lesser lights, who, in common parlance, *forget themselves*.

If this idea of the cells of thought be true, they may be over-worked and require repose, and I may offer here this counsel to the student. On any sensation of head-pain, or a sense of *straining* effort in composition, to repose at once, to rest from labour, or to change the subject of his study, and take light exercise, *breathing freely and deeply*, so as to ensure a full expansion of the lungs. Wilkie, in the zenith of his fame, often felt that he could no longer work on subjects of high imagination without distress, and he set himself at once to portrait painting as a relief: this was the wisdom of experience.

The spirit of philanthropy cannot but be congenial to the science of anthropology. Under its ægis I may be safe in offering this exposition. I do not sketch these Rembrandt shadows of intellectual *malaise* lightly or idly. I have, I hope, a holier purpose, to endeavour to avert those direful sappings of the brain of genius, by over-excitement and exhaustion—for every deep thought is followed by a change of state, and in the irritable brain may be more or less detrimental, even destructive; yet how may we presume to counsel the councillors, who have so profusely displayed before us the riches of their learning and their wisdom?—and, indeed, it may often be a vain endeavour to check the soul of genius when the frenzy of inspiration has possessed it; and how many a brilliant flash might we not lose for ever by such a triumph of control?

The sparks of Genius may be fanned into flame even in childhood. Genius, like that of Pascal and Mozart, may loom out even in the nursery; and what is our mode of culture of this precocity? Is it not too often the forcing of this germ of intellect by a sort of hot-house education? Unhappily, in the very dawn of thought, the plastic brain is allowed to run wild while

it should be calmly restrained. Thought not only begins to grow, but bursts into bloom while the organism is yet in its bud. There are some men who, like Lord Dudley, never were children. But the mother will be ever proud of her precocious pet—and how often these martyrs of early forcing drop prematurely, or, exalted to frenzy-pitch, themselves extinguish the lamp of life. Byron, conscious of this infantile straining, has written,

“I feel almost at times as I have felt
In happy childhood,
Ere my young mind was sacrificed to books.”

The mind may then become a chaos and a blank, or fall into premature senility; these are the wailings of two illustrious in poetry, Byron and Wordsworth—

“Look on me; there is an order
Of mortals on the earth, who do become
Old in their youth, and die in middle age:
Some perishing of study, and some insanity.”

“We poets, in our youth, begin in gladness,
But whereof comes, i' th' end, despondency and madness.”

Yet, paradoxical as it may appear, there are conditions of brain in which composition may prove a safety-valve: the brain, charged, as it were, with intellectual electricity, relieves itself by flinging off the sparks of its intense ideas. Of this Byron, who was “cradled in convulsion,” is again an eccentric illustration. He wrote “to dissipate that despair and despondency with which he wak'd every morning.” The “Bride of Abydos” was sketched to keep him from “going mad by eating his own heart.” Kotzebue cured his melancholy by writing the deeply-dyed play of *The Stranger*. It is believed that the eccentric Elia had been mad as his sister had he not *written hard*—and so on. So delicate is the hair-line between the sthenic and asthenic conditions of the cerebral tissue.

When Phidias raised his statue of Athênê on the Parthenon, the Greeks called her Hygeia, because she had told Pericles in a dream how to cure his architect. Alas! the deities are too often *antagonistic* in their influence, as we all know.

Contemplating the light and dark hours of these children of mighty genius in all their variety, we might almost indite an elaborate dissertation on their racial elements, and arrange them according to their sentiments and passions. Thus, *en passant*,

among the subjects of acute sensitiveness, I may cite Alexander Pope, who was ever *bitterly bewailing* his systemic weakness. The life of John Keats, after a persistent struggle with his burning imagination, was "snuffed out by an article." These, then, are the Sybarites of Genius. A simple violet would *transport* Viotti: the slightest impression seemed communicated to all his senses at once—"everything spoke to his heart." William Cowper "was a stricken deer from the first," and was maddened in early manhood by the dread of reading bills to the House of Lords! Listen a moment to his groaning—

"Long since, with many a horror deep infix'd,
My panting side was charged, when I withdrew
To seek a tranquil death in distant shades."

I might in another arena explain the pathology of Cowper's melancholy, gathered from the lips of the very *Susan* who let the cat out of the drawer; it was a few months before her death. She whispered to me secrets of which I believe Hayley and Southey were not aware. In Kirk White "the lyric muse destroyed her favourite son." William Beattie asserts that "melancholy marked him for its own," yet we are almost loth to believe this confession. "Since the *Essay on Truth* was printed in 4to, I have never dared to read it over, as it re-excited the *horror* that I felt during its composition."

There is a legion of those whose minds were clouded with the varied hues of melancholy: Ariosto, Dante, Alfieri, Rousseau, Voltaire, Cowley, Johnson, Burton, &c., &c.; and (if I may associate them in the category of Genius) the grimaciers—Grimaldi, and, above all, the French harlequin who, for the relief of intense *hypochondriasis*, consulted an eminent physician in Paris. He assured him he knew of but one remedy—to "look on and enjoy the wonderful feats of Carlini on the stage." The patient directly burst forth with this piteous moan, "Alas! alas! I *am* Carlini."

We must feel the deepest sympathy for the penalties of these children of mighty intellect, who have rolled such a flood of rapture into the world of literature to enlighten or delight mankind, or soothe the pillow of anguish. And their own pillow—did the anodyne of slumber often bless it? Ask the shades of those bright meteors that have blazed but to die. The response of Paganini would hapless be—

"My slumbers, if I slumber, are not sleep,
But a continuance of enduring thought,
Which then I can resist not; in my heart
There is a vigil, and these eyes but close
To look within."

The passion of the accomplished violinist almost consumed his being, and he resigned himself to his destiny with the triumphant murmur, "Mais c'est un don du ciel."

Among the intellectual maniacs there was Nat. Lee, who seems to have drawn Cæsar Borgia out of his own heart; Leyden, who threatened to shoot his "best-lover", Walter Scott, and Collins, who ever shrieked wildly when he heard the choristers, and in whom

"Rays of genius only serv'd to show
The thickening horror and exalt his woe."

The spectral illusions of Socrates and Tasso, and Tartini and Mozart, and Pascal, are subjects of deep psychologic study.

It will be clear that I am desirous, in this disquisition, to waive theology and metaphysics, and to regard intellect, not in its higher aspect, a spiritual emanation from the Deity, but as a group of phenomena manifested *on earth*, through the medium of the brain, an organ specially endowed.

The etiology of these aberrations of intellect is intimately associated with the quality of the brain, especially in the *firmness* and *extent* of its convolutions. The brain of Cuvier was probably one of the weightiest and firmest on record—sixty-four ounces; that of John Abercombie sixty-three ounces, about fifteen ounces above the average. Perfection of convolutions may be illustrated by those of Gauss, the profound mathematician, and of Sir J. Y. Simpson, which were "twisting and twining round each other as if they could not find room within the head." I believe the grand secret of intellectual eminence may be discovered in this perfection of the convolutions.

Brains of this quality will endure intense mental labour with impunity; in those of more fragile texture its effect will be in varied degrees detrimental, inducing ramollissement, or acute congestion, and it may even influence the condition of the cranial bones. Some years ago, the skull of Swift, carious and transparent, was displayed, with the beautiful skull of Stella, in St. Patrick's Cathedral. This osseous disease may have betrayed

the secret of his polluted mind, and may, indeed, temper the judgment of those who are prone to condemn without reflecting on the overwhelming influence of organic lesion, which reduced so gigantic a genius to "expire a driveller and a show."

The brain is ever under the influence, often the dominion, of its *Sympathies*, especially those of nerve, and heart, and stomach; and these are often so potent that anthropology must be wary of discussing the psychology of men and nations without taking these sympathies into the category (however degrading their associations) that so deeply modify and vary the national character in its sentiment and action.

Anatomy and physiology, therefore, as Rokitansky has affirmed, are clearly the "*root and base* of anthropological science", however metaphysically the divine and the philosopher may discourse on the primal source of intellect, without regarding the mode of its earthly manifestation. However unpoetical the process of digestion may be deemed in elegant converse, and even slighted in the psychological arena, all, even the most refined anthropologist, must be nourished by the ingesta of that wonderful pouch, the stomach: there is no spontaneous evolution from nothing in the process of gastric assimilation. Almost directly on this feeding may a faulty stomach and irritable brain become antagonistic. (Byron often exclaimed after a meal, "Oh, fool! I shall go mad.") If in this struggle the brain be triumphant, blood is withdrawn from the process of digestion, and acute dyspepsia may be the result. On the contrary, if the stomach *beats*, the brain *labours on* without its healthy stimulus, often to its own utter derangement.

The further disquisition on the Sympathies would lead me too deeply into relative pathology.

The psychological influence of dyspepsia, in its chronic forms, is yet more distressing. The poet was physiologically correct when he longed for the "*dura ilia messorum*". Even the stratagems of war may be thwarted and deranged by gastric influence. It was affirmed by Lord Chesterfield, that "many a battle-field was lost in consequence of the general having a fit of indigestion". And, indeed, the relief of dyspepsia has arrested the most direful consequences. Voltaire had engaged to rise early in the morning to commit suicide, in concert with his friend; but, ere retiring to bed, he adopted a most potent stomachic, and

he wrote at daybreak to his friend that his lavement had acted beautifully, and that he would decline the honour of accompanying him to the other world at present. A disquisition on the crasis and current of the blood, although of high influence on psychology, might lead me astray ; yet I may briefly observe that, in the illusions of genius, scarlet oxygenised blood will light up fairy dreams, and dark carbonised blood call up the phantoms of Pandemonium. Among the first group of the ghost seers—cheromaniacs—we may class Tasso, Tartini, Santa Teresa ; among the second, Blake, Dante, William Cowper. The relief from this “perilous stuff”, the black blood, which is a subtle poison to the brain, may have preserved many a noble life. Dryden was so impressed with the truth of this, that “he had himself bled ere he set himself to any deep work”. Ravallac declared that free bleeding would have averted his hand from the murder of the king. Lord L—— was discovered by Bankhead stuffing the self-inflicted wound in his throat with a napkin after the hæmorrhage had relieved the brain of its plethora, and, consequently, of its frenzied excitement.

One other hint. I may remind the deep student that he often, unconsciously, *forgets to breathe*—the voluntary action of the chest is suspended during his intense mental abstraction. John Hunter was conscious that his own pulmonary system had thus suffered, and often adopted free *voluntary* breathing during study. I need only glance at the benefits resulting from intervals of gentle exercise.

In offering these slight remarks on the dark hours of genius, I have desired to inflict no professional dogmas on the Association ; yet we profess the study of *the whole nature of man*, and I cannot believe it foreign to the spirit of anthropology to blend with the lighter study of man’s form and feature, the deeper analysis of mind, which may promote in the slightest degree the health of those loftier elements that enrol the children of genius among the most illustrious of our race.

ART. V.—NOTES ON THE BUILDERS AND THE PURPOSES OF MEGALITHIC MONUMENTS.*

By A. L. LEWIS, F.A.S.L.

THE Megalithic, or, as they were formerly called, Druidic monuments, which extend in a practically unbroken chain from Great Britain, through Europe, part of North Africa, and Asia Minor, to India, where in places they are still in use, on the one hand, and something similar to which may be traced across America to Easter Island, the Fiji Islands, and Madagascar, on the other hand, form a most important element in Archaic Anthropology. Could we but fully ascertain the scenes and events these monuments have witnessed, how vast an addition would be made to our knowledge of what are now-called prehistoric ages! This knowledge, alas, can never fully be ours; something, however, would be gained if we could, with some degree of precision, fix upon their builders, and upon the purposes for which they were constructed, and it is as a slight contribution to this end that the following remarks are offered.

The "learned and ingenious" antiquaries of the last century have indeed already discovered almost all that we could wish to know respecting these structures, and have fully demonstrated their various and often conflicting theories—to their own satisfaction; but their notions, like many others of the same period, have of late been declared to be entirely unsupported by facts, if not opposed to them. Modern investigation, however, while demolishing or ignoring old theories, has brought us new facts upon which we may in due time base a more durable superstructure of theory than that which has been so ruthlessly upset. Diligent observers, mostly connected with the Government services in India, have shown us that there exist in that country numbers of megalithic monuments, some identical in form, size, and character with certain of our own, and some of smaller size but of similar character; and what is of even more importance

* The substance of this paper was read before the British Association at Exeter in 1869; but it has since been entirely re-written, and is now published for the first time as an introduction to a series of papers descriptive of British monuments, which it is expected the author will contribute.

—that some of them are in use at the present day.* Similar monuments—not merely burial tumuli, which, whether with or without kists, naturally suggest themselves to all races, and are consequently found nearly all over the world—but circles or other monuments, having a distinctly marked and special form, have been found to exist in North Africa, Asia Minor, and Persia, and have long been known in Scandinavia, France, Spain, Portugal, and Italy, so that, as I have stated, there is a practically unbroken chain of these monuments extending from Hindostan to Britain and Scandinavia. Now, as I have observed in another place,† “It seems to me almost certain that there must have been some connection, racial or otherwise, between the peoples who have, in different countries, and, it may be, at different periods, constructed these monuments. It is easy to understand that similar necessities might lead to the construction of rude flint implements of a similar shape by nations which had nothing in common, and which were separated by centuries in time, and by continents and seas in space, but it is not easy to conceive any impulse or necessity that would lead a nation to arrange shapeless stones over acres of ground in a special manner, similar to that used by another nation with which it had had no connection whatever;” and, when we add to this, the consideration that throughout the countries over which the line of monuments from India to Britain extends there have prevailed, and I might almost say do prevail, certain obscure but identical practices and superstitions,‡ we must, I think, come to the conclusion that there has been a very great common influence at work throughout the whole of this area.

Mr. Squier has recently shown me a picture, prepared for his forthcoming work, of a kind of circle in Central America, and circles of some kind are said to exist in Australia, but whether they possess the special characteristics which distinguish those of India and Britain is as yet uncertain; and I propose, therefore, to dismiss them from our consideration on the present occasion, although other traces are not wanting of a possible pre-historic European influence in America, and perhaps from America to the

* Colonels Forbes Leslie, Meadows Taylor, Ross King, Dr. Hooker, Sir W. Elliott, etc.

† Paper read before the International Congress at Norwich, 1868.

‡ See Colonel Forbes Leslie's *Early Races of Scotland* for many interesting particulars.

Pacific Islands. The Tonga cromlech (so called), and the stones set up by the Esquimaux, as described to me by Dr. King, do not seem to have any affinity whatever to our own monuments, and those in Madagascar perhaps owe their origin to an Indian, an Arabian, or even a Syrian source.

Assuming, however, that the monuments of Europe, North Africa, and Asia, have a certain community of origin, we next ask—were their builders of one race? It is not necessary that they should have been—in fact, the barrows, which probably cover their remains, give us skulls of at least two very different characters, even in the limited area of the Wiltshire downs—yet if there be any force in the arguments I have advanced, there must have been such a community of influence as could probably only have arisen from at least a *partial* community of race, caused by immigration, peaceful or otherwise. Nor are other traces of such immigrations wanting, as archæologists well know. The question then arises, where did this influence originate? Did it start from India, and move steadily westward, through Asia, along the Mediterranean coasts, and through France, till it reached even these distant islands, and then, checked by the ocean, turned in a north-easterly direction into Scandinavia? Or was this country, formerly the chief seat of the Druidic system, also the birthplace of the influence under which these monuments were constructed? Or is it not more probable that that influence originated at some central point, and spread gradually thence towards the various countries I have mentioned? What was the social condition of the builders of these structures? They must have been acquainted in a high degree with mechanical appliances; ropes, levers, wedges, and other means must have been largely employed; the inscribed lines found in places, as at Gavv Innis, in Brittany, also seem to have required implements of bronze or even iron, but above all there must have been, in Western Europe at least, such a unity of purpose among masses of men, resulting in such a combined effort and sustained discipline, as speaks volumes for the perfection (after its kind) of the social system under which they lived. Could any of the savage nations of the earth combine, under any social system of their own, to the extent necessary to construct a work—a work, too, of no absolute necessity, such as Avebury, with its enormous earthworks, miles of avenues, and vast circles of huge stones? I answer con-

fidently they could not ; and I maintain that the social organisation and general civilisation of the builders of these monuments in Western Europe must have been of a much higher character than those of any native race now existing in the southern hemisphere, and in some respects than those of the peoples who now use similar, but much smaller monuments, in different parts of India. Inigo Jones, indeed, attributed Stonehenge to the Romans, on the express ground that it was a work of art, that the Britons had no arts, and that where no art existed, no work of art could be produced. We, while justly carrying these works back to a further date than the Roman invasion of Britain, have inconsistently sought to attribute them to an unknown race, vaguely spoken of as "pre-historic," and which, if it ever existed at all, we believe to have existed in the most utter barbarism. Who then, were the builders of these monuments ? To this question, so far as Europe and Africa are concerned, I think that there can be but one reply—the Celtic nations and the peoples influenced by them, in which category I include amongst others, Celts, Gaels, Umbrians, Iberians, Belgæ and Scandinavians. In Europe and Africa these remains are found only in the countries where Celtic influences exist, or have existed, and where no other races have existed to whom we can reasonably attribute them. With respect to Asia we cannot, perhaps, positively say so much at present, because, as I have already observed, we do not yet know whether these monuments originated there or not, and neither do we know whether the Celts, though called Indo-Europeans, are of Asiatic origin or not, or whether they have influenced or been influenced by the inhabitants of India, or whether some common influence (possibly Phenician) has acted upon both.

In Western Europe, however, where are situated the largest of these monuments at present known, Roman remains, such as pottery, coins, &c., are very occasionally said to be found in connection with them ; but this, if admitted, may in some cases be due to accident, in others to the fact of Roman articles being imported before the Roman invasion, and in others to the natives adhering to some of their old fashions, even under the Roman occupation. If, therefore, Roman remains have been occasionally found with these monuments they prove little ; but what they do indicate is, that the monuments were constructed by the population immediately preceding the Romans, *i.e.*, the Celts. The Celts, moreover, possessed all the qualifications which we

found to be necessary for their construction; they had mechanical appliances, metal tools, and, above all, a great religious motive, and, in the Druidic hierarchy, a great religious and social organisation and organising power. Nor do I know of any good reason that has been adduced against the Celtic origin of our own monuments, further than that the Celts never built them in historic periods; to which we may reply, firstly, that we do not absolutely know this; secondly, that what we call history introduces us to the Celts while struggling for existence against foreign invasion, and having little time to spare for such purposes; and, thirdly, that Druidism was vigorously suppressed by the Roman policy on the one hand, and supplanted by Christianity on the other hand, when the construction of monuments of this class would naturally cease. It is also urged that the names by which we know them, such as Stonehenge, bear no reference to their object, and that they must be of such antiquity that their object and origin had been forgotten, even before the commencement of what we call the historic periods. They are, however, not named in any chronicle for some centuries after they must have been disused; and disuse for several generations, accompanied by change of religion, and continual foreign invasion and internal discord, amply account for the loss of any authentic local tradition respecting them, especially when we take into consideration the great ignorance and indifference manifested towards all antiquities in all ages by the great mass of mankind. Still they have in many places, and especially in Celtic countries, been regarded with hereditary superstitious reverence, though their purpose has been lost sight of.

The Celts, then, under Druidic influence, were, I submit, the builders of these monuments, so far as Europe and Africa are concerned, and to have arrived at this conclusion will aid materially in the second branch of our inquiry—the purposes for which they were constructed.

In considering these we must bear in mind that, while all had probably some more or less religious or public purpose, it is not likely that the different well-marked varieties had all a uniform purpose, and we must, therefore, examine each class separately. The principal varieties are:—

1. *Alignments*, or arrangements of upright stones in lines. The largest of these is at Carnac, in Brittany.

2. *Cromlechs*, or arrangements of upright stones in circles. The largest of these was at Avebury, in Wiltshire.

3. *Dolmens*, or table-stones (divided by the French archæologists into various classes under different names). These are formed by one or more flat stones resting on upright stones; Kit's Coty House represents one well-marked class, and the dolmens of Locmariaker represent another class.

All these varieties are said by some to have been places of sepulture; and by others, to have been places of sacrifice or worship; this question we will consider presently.

4. *Menhirs*, or single upright stones, which may have been landmarks or commemorative pillars, or tombstones, and in which some trace the remains of phallic worship, a supposition the more probable as the particular class attributed to that superstition exists chiefly on the Continent. There, as we gather from the classic writers, the ceremonies practised were of a more obscene, perhaps of a more Phœnician, character than in Britain, which was the centre of the Druidic religion, where its rites were probably kept more free from phallism, and other matters which are believed to have formed no part of its system. The largest menhir known is at Locmariaker, in Brittany, and must have been sixty or seventy feet high before it fell to the ground. The inscribed stones of Scotland, and Ogham stones of Ireland, are of a different character to this.

There are many other varieties which, indeed, like the menhirs, do not possess that special character distinctive of the circles, but which may have been the product of independent thought in any part of the world; such are cists, formed of flat stones, so arranged as to form a sort of box or chest, generally covered with earth, and used for sepulchral purposes; peulvens, a smaller kind of menhir, frequently found on the top of sepulchral tumuli; rocking stones, which, however, are generally of natural formation, with other varieties; and there are also remains of a different class, though probably of the same period, which do not come within the scope of the present paper, where the only question remaining to be discussed is the use of the allignments, circles, and dolmens.

With respect to the circles and allignments, it is contended by some distinguished archæologists, that they were intended not for sacrifice or worship, but as places of burial; the principal

argument adduced being, that interments are frequently (not always) found in them, sometimes under nearly every stone of which the circle is composed. Westminster Abbey, however, also contains interments, yet its principal purpose is none the less that of assembly for worship; in fact it is most probable that the practices of burying in places of worship, and of placing those buildings duly east and west, were both derived from the Druids, as are many other very orthodox customs. On the other hand we have the allusion of Hecataeus to a temple, which more resembles Avebury in position and description than any other structure we know of. We have to consider the peculiar arrangement of the stones outside the circles with regard to the rising sun, an almost exact coincidence in which is found in the English and Indian circles;* this coincidence, which could not be accidental, is easily explained by the temple theory, but is altogether meaningless on any other. We have also to consider the great improbability that a huge work like Avebury would have been constructed as a burying-place for one individual, since it probably took more than one generation to complete it, or that it would have been on so symmetrical a plan, had it been a general cemetery; besides which, no interments have been found in it. It has been replied to this that the Pyramids, though sepulchral, were undertakings of at least as large a character as Avebury; to which I answer that, far as I believe ancient British civilisation to have been above some modern notions of it, I cannot suppose that it could compete with the dense and despotically-wielded population and resources of ancient Egypt. It is true that sepulchral mounds are sometimes found surrounded by circles of small

* In England, Stonehenge, the Roll Rich, Dance Maen, and the Long Stone Circle, have each a single stone outside the circle, and in a north-easterly direction; Stanton Drew and the Hurlers each consist of three circles in a line, running in a north-easterly direction; the Nine Maidens circle, at Boscawenun, has a stone in the centre which leans in a north-easterly direction; and, in short, I have only seen two circles which had no reference to the north-east, and in both these there was reason to believe that such reference might formerly have existed. Some of the circles in India have also single stones outside towards the south west; these may be found at Stanton Drew, the Hurlers, Dance Maen, and probably elsewhere. Three circles in line, like Stanton Drew and the Hurlers, are depicted by Colonel Forbes Leslie as existing in India. It must be remembered that, while the sun rises at midsummer to the north-east in England, it rises nearly east in India, and the outlying stones are there placed east, and not north-east.

stones, but these have no outlying stones, and are in no way analogous to the larger circles.

The principal argument, however, in favour of the belief in the sacrificial uses of our circles and alignements will be found in the uses to which similar structures are at this day put in India. Whatever force the arguments I have advanced in favour of the community of influence under which the Indian and European monuments are and have been constructed may have had, redoubles itself in favour of their having a common object. Those arguments were such an identity of plan as could not be accidental, extending through an unbroken chain of communication, and the existence of common practices and superstitions, and other traces of affinity throughout that chain. When, therefore, we learn from Colonel Forbes Leslie and others, that small stone circles and alignements are used to this day in India for purposes of sacrifice, and when we learn that the circles have, as an altar, a flat stone like that called, and doubtless correctly called, the "altar," at Stonehenge, and have single stones placed outside, as in the English circles, it seems to me to be sufficient and conclusive proof that the English circles were used for the same purpose as the Indian,—namely, as places of sacrifice. Dr. Hooker, indeed, to whom I am under obligations for information kindly afforded me, found a number of sepulchral monuments, arranged in a kind of large circle, at Nurtiung, but this again was clearly of a very different character from those described by Colonel Forbes Leslie, and from those which exist in England.

With respect to the alignements, it may be said that Carnac is too large to have been a temple; but we must not forget that in India the number of stones used is equal to the number of individuals, families, or tribes, engaged in the ceremonies, and that this rule probably prevailed in Europe. It may have been considered as great a work of piety to add a stone to the lines of Carnac as it has since been thought to build and endow a church or monastery. Sepulchral tumuli have, indeed, been found connected with alignements in Shetland;* but as the latter were also found unconnected with tumuli, it may be inferred that the tumuli were dependent on the alignements, not the alignements on the tumuli. The fact that small alignements are used in India for sacrificial purposes, turns the balance in favour

* *Memoirs* of the Anthropological Society of London, vol. ii.

of the supposition that our own alignements, as well as our circles, were primarily used for sacrificial purposes.

It is rather strange that, while the circles and allignments have been considered as exclusively sepulchral, the dolmens, or table-stones, many of which, undoubtedly, are sepulchral, have been said to be sacrificial altars. This confusion has possibly arisen from the fact that there are, at least, two classes of dolmens; one class, like "Wayland's Cave" in Berkshire, Chun Quoit in Cornwall, or those at Locmariaker in Brittany, in the form of a chamber or gallery, with or without lateral chambers, still partly sunk in the ground, and, generally speaking, formerly covered, or intended to be covered, with earth, at least as high as the capstones; the other class, like Kit's Coty House, or the "Spinster Stone", which are not in the form of a gallery or chamber, are not sunk in the ground, and never were, or could have been intended to be, covered. Both of these classes are found in India: the former sepulchral, covered to the capstones, and called kodi-kals, or umbrella-stones; the latter, not covered, and without sepulchral remains, called topi-kals, or capstones; these are believed to have been in use about the time of the first Cæsars.*

The first class varies in size. Chun Quoit is about eight feet cube; Wayland's Cave is about twenty-five feet long and four feet high; the gallery at Gavv Inis is over fifty feet long and eight feet high, and is still covered with a tumulus; one at Locmariaker, not covered, is nearly seventy feet long and about eight feet high. It seems to me very improbable that this edifice, seventy feet long, built with enormous expenditure of time and labour, but in places as steep as the roof of a house, and, therefore, notwithstanding such expenditure, most unsuitable for the slaughter of bullocks or other sacrifices, was used as an altar, and similar objections of unfitness apply to other monuments of this class, while no such objection can be raised to their sepulchral uses. Indeed, there is a remarkable analogy between the gallery and chamber in a tumulus, the gallery and chamber in a pyramid, and the cave in the mountain side, which, probably, was the first burial-place, and gave the idea of constructing the others; at first, perhaps, in flat countries, where

* Sir W. Elliott, *Transactions Congress Prehistoric Anthropology and Archæology*, 1868.

mountains did not exist, and afterwards, from force of habit, even where the mountains themselves might have been made available. The fact that some sepulchral dolmens are not now covered with earth may be explained in many ways; and it is not absolutely necessary to their sepulchral uses that they should have been covered at all, since stone cists, of an analogous construction, and known to have been used as tombs, are frequently found in India without any covering;* dolmens, apparently intended for tombs, and without covering, exist in Portugal,† and are found in Aveyron, in the South of France, elevated on mounds.‡ We shall not, then, be far wrong in concluding, as a general rule, that all dolmens of this class were sepulchral.

With respect to dolmens of the second class, it is clear no interment could have been made in them, as they are in no way suited for such a purpose. They may sometimes have been erected over interments, though investigation has in some cases shown that this is not the case; while in India they are found on bare rock which has not been disturbed;§ but I am more inclined to believe that they were used sacrificially, not that, as has been suggested, the flat stone at the top was used as the altar, for such a use would be almost impossible, but that they had an altar placed before them in the same manner as that at Stonehenge before the great trilithon. Some of the dolmens of this class have avenues of stones leading up to them,|| and others may have been surrounded by circles of smaller stones. An arrangement of three stones, something like Kit's Coty House, without the covering stone, but which may, indeed, have been at one time covered, would seem to have existed at Avebury and at Stanton Drew; and I am, in view of these circumstances, inclined to believe that dolmens of this class were mostly sacrificial, though, perhaps, sometimes erected as memorials, or used, like those in the Himalayas described by Dr. Hooker, to burn bodies upon. Their sacrificial purpose would not, of course, be inconsistent with an occasional and subsidiary sepulchral use.

* Forbes Leslie.

† Pereira Da Costa.

‡ M. Cartailhac in *Transactions Congress Prehistoric Anthropology and Archæology*, 1868.

§ Forbes Leslie.

|| Spence Bate on Remains on Dartmoor. An avenue, with apparently the remains of a dolmen also exists in Addington Park, near Aylesford.

In conclusion, I may add that there are some few monuments which do not come under any of the heads which I have mentioned (such, for instance, as the "Men-an-tol", in Cornwall), and that there are many others which are in such a ruinous condition that it is very difficult to form an opinion respecting them, even from personal inspection, and almost impossible to do so from descriptions, pictures, and sometimes even from models, which are all too frequently defective or utterly fallacious in some point or other.

ART. VI.—THE IRAYAS, YGORROTES, AND MANOBOS OF THE PHILIPPINES.*

BESIDES the Negritos, Dr. Semper saw a good deal of the other wild races of the Philippine Islands, and devotes some of his pages to their description. He designates these people the "Heathen Malayan Races," by which is to be understood different small wild tribes in the remote parts of the islands, exclusive of the Bisayans and Tagals, who constitute the great bulk of the population. Embracing these latter as well as the wild tribes under the general term Malay, he says, of the first immigration of the Malays, every historical document and every monument is entirely wanting. This presumed immigration is spoken of in the face of this fact, and of the knowledge that the races of the islands were pretty much the same as they are at the present day, when they first dawned upon the sight of Europeans. Ethnologists—and every man regards himself to be a competent ethnologist—seem always to feel an inherent necessity for assuming an immigration of people to the region in which they find them. They appear to forget that the simplest, most rational, and philosophical conclusion is that such races as those of the Philippines have always been where they are, and nearly as they are from the beginning, and this beginning may be exceedingly remote. At least there seems to be no right to assume

* *Die Philippinen und ihre Bewohner.* Von Dr. C. Semper. Würzburg: 1869.

these immigrations before we can point to some evidence of such immigration. In the presence of the recent discoveries of paleolithic stone implements in New Zealand, it does not appear at all improbable that the stone implements of the Philippines may at some future period be shown to belong to the prehistoric epoch.

Mr. Crawford speaks of the people of the Philippines as belonging to the Malayan races, without apparently meaning more than that the Tagals and other similar people of the islands resemble, or appertain to that division of mankind called Malayan. For Mr. Crawford, who was personally acquainted with the people of the Indian Archipelago, and had devoted the best powers of a very acute mind for a long series of years in an entirely unprejudiced manner to the study of these races, both physically and philologically, says, "Some writers have fancied the Negritos to be the original inhabitants of the archipelago, and the fairer race to be intruders from some unknown country; but for this hypothesis there is not a shadow of evidence, historical or lingual, and it must be regarded as the mere dream of the inventors. For anything known to the contrary, both the Malay and Negro race have an equal claim to be considered as aborigines" (*Dictionary*, p. 339).

When compared with the sparsely-scattered Negritos, the number of the independent heathen tribes not changed by Christianity is very great. Upon some islands of the group, as in the east of Mindanao and in the north of Luzon, they live in tolerably close masses; so that by the intimate study of these races, we may hope to sketch a somewhat accurate picture of the social state of the land as it might prevail some centuries before the Christian time, on the arrival of the Mahometan priests. These appear to have advanced from the south-west towards the Philippines on the north and the east.

Within this community of races, which, as Dr. Semper properly says, may best be distinguished by the term "Malayan," the individual races have numerous differences of dialect and of customs, of clothing, of character, and of physical structure, and in many cases indicate obvious traces of foreign mixture. The Mammas on the east coast of Mindanao lead the life of the Negritos, but are essentially distinguished from these by the mingling of relations with their Malayan Christian neighbours.

The very first view reveals a similar mixed race between Negroes and Tagals in the Balugas, living in the fertile province of Pangasinan, to the west of Manilla, in Luzon. The word "Baluga," which means *hybrid*, shows that this race existed before the advent of the Spaniards. Others of these races show an obvious mixture of Chinese blood.

As an example, in order to illustrate this Malay period, the author specifies races in the north of Luzon and in Mindanao, whom he had the opportunity to observe for some months.

"Although the Irayas, living on the western side of the north-east cordillera of Luzon, not far from Palanan, show the Malayan type in bodily structure unmistakably, there may also be perceived amongst them two different kinds of mixture quite as obviously. Chinese blood surely flows in the veins of one branch, which dwells upon the eastern arm of the Rio de Ilagan, the Catalangan, from which they have obtained the name of *Catalangans*. The proper Irayas, on the contrary, on the Ilaron, live socially with the Negritos of the region, are connected with them, and lead with them a happy harmonious life. They not uncommonly mix also with the so-called "Cristianos remontados"—Christian inhabitants of the plains, who have fled before the arms of the authorities into the somewhat inaccessible mountains of the Irayos. Such diversity of mixture is expressed as well in their customs and usages as in their character. Among the Catalangans the fields, in spite of the want of buffaloes and every implement for sowing and harvest—they cut the stems of the rice singly with a small knife—the fields are kept perfectly clear of weeds and stones, and the luxuriously productive rice affords them a superabundant harvest. Among the Irayas, in the strict sense of the word, buffaloes are already employed; but their rice-fields yield them, on account of the little care bestowed upon them, only unproductive harvests. The houses of the Catalangans are mostly finished with very thick high roofs of reeds or grass—the so-called 'cogon'; whilst the Irayas appear to prefer the more easily-restored, but less sheltering, flat roofs of split bamboo canes. While among the former the free places around and under the house, upon which some small monuments dedicated to their gods stand, are kept clean in the most careful manner, the latter suffer all kinds of grass and weeds to grow on them, and, like the Tagals in Manilla, cast below all the sweep-

ings through the chinks of the floor. In their clothing and ornaments the two races pretty much agree. But, while the Catalangans exclusively employ, both as tattoo patterns and also as decorations for their sacred places, characters which appear to me to be of Chinese or Japanese origin, the Irayas everywhere make use of patterns for ornament formed only of straight or simply curved lines, as we have already seen in the case of the Negritos. As in June, 1860, I was going over the Cordillera of Palanan with twenty-one Christians, we were nearly starving with hunger in the midst of the greatest quantity of maize garnered up in the sheds of the Catalangans—for our entreaties for the means of life were met with constant refusal. I felt myself constrained, with weapons in hand, to seize these means of life which they would not give us voluntarily, and for which no payment at that time appeared to be high enough. It was only the firm menace of an uncompromising enforced contribution that brought me into Minanga, from whence I might send back my people at Palanan as much maize and rice as would support them on the way. As a dumb witness of their want of hospitality, my companions pointed out to me, shortly before we arrived in the land of these egoists, in the midst of the forest a heap of stones which, piously following an old usage, the inhabitants of Palanan had cast up in memory of a Christian who had here perished of hunger. On his march through their land the Catalangans would not give him a corn of rice for money or good words. How oppositely the Irayas, living but a few miles off, acted towards me. Here they everywhere lightened the journey by the most hospitable reception, gifts of every kind for me and my people, they made feasts, and they gladly afforded assistance in the ascent of the mountains, and in oars for the boats, and converted our travel into a real pleasure, so that I gave them the promise to visit them again soon, as I was forced to leave the country by a violent fever. Unfortunately, I was prevented from accomplishing this design by the unfolding of my plan of travel.

“But the religion of these two races, notwithstanding many variations, has again so much agreement that we may safely assume to behold in the few cognizable traces which are common to all the other wild races of the land, the remains of a religious faith such as may have prevailed in the former Malay period,

before the arrival of the Mahometans. Besides some pairs of gods upon whose relations and attributes I am not able to be very precise, they do homage quite distinctly to the souls of their forefathers, which they receive under the name of 'Anitos', into the series of their inferior deities. These are house gods, true Lares and Penates. There stands in the corner inside the house a kind of vessel, which has nothing striking in itself, but we easily see that the members of the family treat this corner with great reverence. In this pot one of the Anitos has his seat. The space under the house, which also commonly serves as their burial-place, is rendered sacred by different marks of distinction of other Anitos. Likewise the little space situated before the entrance and side under the roof of the house, before the ladder, the shed in which the smithy is placed, and above all the spots before the house distinguished by special small sheds resembling altars. Harvest also is consecrated to their Anitos, to whom they offer the first fruits in great general feasts. To the other higher gods they appear to devote, on the part of the Catalangans, an especial service in a temple. Unfortunately sickness prevented me from visiting the place where this stood.

Thus the Irayas, with their tolerably highly-developed faith and their worship of ancestors, agriculture diligently pursued, frugal impulses caring for the coming time, and great skill in art manifested in the construction of their houses as well as in their ornaments, stand opposed and superior to the true Negritos. On which account they appear to be less dependent upon nature. In order to defend their rice-fields and tobacco plantations against desolating floods they have built dams. In the rivers they still pursue large fishes with the spear, but they know how to catch by weirs the smaller sorts making their appearance in countless numbers at different seasons, which serve them when salted for some months. By abundantly-provided store-houses they overcome the injurious influences of swarms of locusts or bad harvests. And thus is expressed in almost every little occupation of their lives the commencing mastery of man over the powers of nature. But to the omnipotent influence of the season of the year, of the periodical change of the monsoons, with their droughts or abundance of rain, they also listen like their neighbours the Negroes, who ramble about freely as the wild animals; and thus they also regulate not merely the times

for sowing and for harvests by these seasonable appearances, but also their natural and religious festivals by the course of the sun.

“On the western side of the island, in the mountainous region which is commonly distinguished as the land of the Ygorrotes, a number of races live near one another, which are distinguished among themselves, as well as from the Irayas already depicted, in more than one relation. Whilst these latter, in the highest degree peaceable, are marked as industrious agriculturists, the former are spirited defenders of their inherited lands, have frequently driven back the invading Spaniards, and rendered conversion by the Christian priests difficult from heathenish perverseness. Whole districts have been laid waste by this strife in the course of the last decades of years. Here, villages have been burned down and their inhabitants chased away, because one of them has cut off the head of a Christian. There, the tobacco plants, approaching ripeness of their leaves upon hundreds of acres, have been cut down by the soldiers of the Government, in order to extirpate tobacco smuggling. Aqueducts, which conducted the carefully collected small springs of the mountain declivities from the fields raised up in the form of terraces, were destroyed, and everywhere the destructive influence was exhibited, but above all in the so-named Comandancia of the Ygorrotes. Since then, the Government has made a number of smaller provinces out of this mountain district, and has begun to support, or at least not to hinder,”—how enlightened and gracious of the Spanish Government!—“the Empresa Cantabro-filipina, established in Mancayan for working copper mines. Since then trade and commerce have entered into these regions, and with them mutual confidence in a gratifying degree. Although excellent agriculturalists, which the Irayas, their race relatives, are still considered to be, warlike life impresses upon them a particularly austere and unfriendly character, which they frequently moderate by reliableness and openness. The men never go to their field labour without being armed with lance, shield, and a broad hatchet furnished with a point, which latter serves them as well to climb trees as to split the heads of slain enemies. Even in their houses they rarely lay aside their weapons. In this way they are, comparatively speaking, the most industrious of the wild races of the north. They had of old the reputation of being

the most excellent smiths, and even the hatchet, already mentioned, the so-called *aligua*, is exported by them in some measure to the east and north. With greater art they know how to entwine metal chains, and the small clay pipes made by them stand on a higher grade of execution. Besides these there are frequently found little copper pipes mostly in imitation of the form of a man squatting down in the national manner, which are met with from old times in the celebrated marshy places of Buguias. Long before Christian times the Ygorrotes appear to have explored the rich copper mines in the district of Mancayan, out of the products of which, by simple calcination, they made their copper cauldrons, celebrated for their purity. Also they knew how to make ornaments of the gold which they obtained partly out of the quartz mines, and partly washed out of the sand of the rivers. But what especially distinguishes them, as well from their heathen as their Christian fellows, is their inventive powers in the construction of scarecrows, which they set up in the fields to frighten the numerous rice birds away. For this purpose they employ the power of the mountain brooks, streaming through their fields, which they communicate by means of a fitly contrived bamboo reed, giving way to the thrust and then quickly coming back again, to a frequently very complicated system of rattling sticks and moving rags, human figures, &c. Alas, when I came into this region towards the end of harvest, I saw only very few of the smaller of these instruments in motion.

“The somewhat more gloomy and more adventurous spirit impressed upon them by such occupations, which expresses itself also in the other customs of daily life, stands quite in harmony with the greater wildness of nature surrounding them. Only where they rejoice in the deepest valleys in a sunny climate, like the Christian inhabitants of the plains, do they adorn themselves with the bright colours of their head cloths, or with the pure white long mantles which they cast round their bodies. But where in the higher mountain valleys, or in the mountain passes of five or six thousand feet altitude, the inhabitants, in moist soils only producing firs, grass, and a bullock living socially, root after gold, or on the steepest declivities they must pile up with unspeakable pains the blocks of rock into a wall in order to gain a little spot of horizontal land for their rice culture; there the prevailing indigo blue, which is interspersed with originally white

stripes, stands in unison with the more gloomy mind and the mists of the landscape and the darker green of the pine forests. Only the Philippine falcon (*Falco Pondicerrianus*) hovering over the loftiest heights reminds the traveller that he is in tropical lands, or the dazzling white flowers of an orchis (*Phalænopteris*) two inches long greet him, which swings upon the high fir branches like a female friend from sun bright regions.

“The allied heathen races in the east of Mindanao present to us quite another picture. Among these must be mentioned first of all the Manobos. In spite of the like psychical peculiarities, although there is perceived among them on the first view, especially in the Mandayas, a mixture with Chinese, and notwithstanding their fundamental principles, their prevailing Anito-doctrine, and the internal alliance of their language, here a series of special peculiarities have been developed or obtained which cannot be pointed out in the same cultivation in the races of the north. Whilst these are settled, and from year to year manage the same fields and forge the same weapons, there every chief, every *bagani*, unites the few men directly depending upon him round himself, and lives thus in two to four houses in the thickest forest, far removed from his nearest relatives and friends. Each of his wives, the number of whom is determined by his riches, possesses a house for herself, founded upon high piles, in which she lives with her children and the slaves belonging to her. One among them is the proper legitimate consort, who commands the others. She and the children of the *bagani*, his wife's brothers, when these have not founded a homestead, and a number of slaves, who for the most part are prisoners taken in war, must provide for the daily maintenance. Besides tobacco, maize, bananas, sugar-cane, and camote, they cultivate, above all, rice in such large quantities that they obtain sufficient support for themselves for the year, and also an excess for trade. When I, in August, 1864, had lived with the *bagani* Adipan, in the west of the fenny region of Agusan, for many weeks, he was able, when I took my departure, to furnish me by sale with a provision of rice for months, without any diminution of supply being observed in his stock. A few days afterwards I met on my journey, upon the river below, a great number of boats from Butuan, whose Christian inhabitants were drawn into the land of the Manobos to provision themselves for the next half year. More than once

the Manobos, with their abundance of rice, have rescued their Christian neighbours from famine.

"The unsettled mode of life of these Manobos is founded partly upon their mode of agriculture. The thinness of the population, in connection with the amazing fruitfulness of the land, permits them to follow their inclination for isolation, and does not compel them to use any artificial restoration of their fields and watering, nor to lead a settled mode of life. They prefer to make their sowing with less labour, sometimes here sometimes there, which the exceedingly rich soil returns more than a hundredfold. The system they pursue is characteristic of many other heathen Malay races, and is also adopted by many Christian inhabitants of the Philippines. It consists essentially in the most primitive working of the land. The large forest trees as well as the under-wood are cut down, and then, after proper drying by the warmth of the sun, are burned. In the ashes and the slightly turned up earth the individual rice plants are set out in bunches, or the rice itself is directly sown. Many rice corns or plants by this means naturally perish; still, that rice which grows up and ripens, gives them in these fertile regions in many places returns of corn two hundred and fiftyfold. In a few years the soil of this so-called "canin" is exhausted, as they neither introduce manure nor change the cultivation. They then go further, establish themselves upon the first spot which looks favourable, and begin the labour of felling and sowing afresh. They build their storehouses upon posts in the midst of their fields. This system of "canines" is also usually adopted by the Christians in all parts in which the thinly-scattered population affords unlimited extent of land for cultivation; but, where the inhabitants are more thickly crowded, they are compelled by necessity to adopt a more settled life, and a more regulated occupation of the same piece of land. In this the Christians are not at all distinguished from their heathen fellows."

How should they? There is a fundamental ethnographic error in distinguishing the tribes, according to whether they are converted or not—into Christian and heathen. They are all in the same condition of primitive people, and cannot reasonably be expected to change their nature when they are induced to accept in any degree, or in any fashion, the dogmas of the Spanish priests.

“But what quite particularly marks out the Manobos from all the other Philippine tribes known to me by examination, is the form of their religious superstition. Although they hold essentially the same Anito worship as the Ygorrotes and Irayas of the north, still the ancestor worship of these is kept more in the background here by the service they consecrate to other gods. Thus they hold thunder to be the voice of the lightning, which they revere in the form of a strange animal. When lightning falls upon the earth and strikes a tree, the animal, in their opinion, strikes one of his teeth into it. There are old stone hatchets, belonging to a former period, which look like those found in our European pile buildings, and have been discovered by them sticking in trees or in the earth. The crocodile also is held by them as sacred. But the most important of their gods, next to the *Dinata* (= Anito) of the harvest feast is the god of war, to whom red colour is sacred. When in the region of the marshy district of Agusan, around which the different families of the Manobos penetrate, in October the harvest has commenced, the men begin to polish their spears and shields, their daggers and short swords; and when the harvest is ended, and the talisman of the war-god has notified to them the favourable event, they move in small troops under the lead of their *bagani*, who is at the same time the priest of the god, and who must bear his talisman in battle in a secret manner to the dwelling of their enemies. It is fit for them to surprise their enemies early in the morning while they are sleeping, or in the forest, when every adult male is put to the sword, the children and women being carried away as slaves. Only rarely does it come to single combat, and this always happens to the leading *bagani*, as he, the most courageous of his people, goes first, and, as priest, has to bring an offering to his god. When the enemy is successfully defeated and killed, then he draws a sacred sword devoted to this service only, opens the breast of the dead body, and dips the talisman of the god, which hangs round his neck, in the smoking blood. Then he tears out the heart or the liver, eats a bit of it as a sign that he has now satisfied his revenge upon the foe. It is never allowed the common people to taste human flesh. It is the prerogative and also the duty of the princely priest. There always lies some personal motive at the foundation of their wars. But mostly the appeasing of their revenge takes another, not

religious, character. Individually they lie in wait upon the roads for their enemy, whose motions they have explored and watched for weeks, and strike him down from a safe hiding place with their long spears. They then bring the skulls of their enemies in triumph to their houses, but they do not hang them up in and before the house, as many heathen tribes in Luzon do, as signs of their bravery. Some of the slaves they carry home are always devoted to the war-god, or to the god of their diseases. Standing at the edge of the grave dug for them, their lives are taken with the sacred dagger or sword with a few sure strokes. The other slaves, relations or friends of the offering, must fill up the grave with earth.

"Thus the Manobos stand opposed to some other nearly allied tribes of Ygorrotes and Irayas as religious fanatics, in whose worship the offering of men and cannibalism play a predominant part. Among these three representative people, approaching the extreme pure Malayan state of culture, there is probably found all possible differences of the race, which run parallel to the differences of dialect. The older Spanish writers mention as a remarkable, but afterwards quickly forgotten, fact, that the Negritos all speak only one single similar tongue, whilst the brown inhabitants of the different islands, although all surely belonging to the same race, differ in the great number of their dialects. Only in some few, but certainly essentially, characteristic traits, do they all agree.* Once they were all, according to the testimony of the same Spanish writers, agriculturists, and cultivated rice in such quantities that already, at the advent of the Spaniards, it formed an article of trade. Several of the tribes might have been settled and pursued agriculture in such perfection as the Ygorrotes do now. They then all lived divided into small clans, each of which was subject to a prince or chief, or *bagani*. Although the Spaniards in their descriptions were tolerably liberal with the word *Rey* (King), yet they frequently used the term *Reyezuelo* (a smaller king, *regulus*), and still more the explanation often given to it shows that the power of this king, only in the rarest cases, extended beyond the immediate territory of the village. The com-

* A contribution of importance, relating to the languages of the Philippines, has just appeared in the *Transactions* of the Batavian Society of Arts and Sciences, vol. xxxii. Batavia: 1868. It is entitled "Bijdrage tot de Kennis der Talen en Dialekten voorkomende op de Eilanden Luzon of Lesoeng, Panai of Ilong-Ilong, Balangingi, Solog, Sangi, alsmede op Noord- en Midden-Celebes." Door J. G. F. Riedel.

mencement of the foundation of a state appears to have been effected only at a few points, at which, shortly before the arrival of the Spaniards, the Mahometans, coming from Borneo and Ternate, had settled down. All civil contentions, according to the old customs of the princes, who maintained their position partly by rank, but especially by personal bravery, were settled in council by the elders of the village. Lastly, there was developed, by the custom of people of rank selecting their concubines among the female slaves seized in war, in the course of time as the few houses of a family enlarged to a village, the class of free or *Timavas*. The children of these, or even their kinsmen, who had served long as slaves were granted freedom; and this class of the free stood between that of the people of rank, who by their marriages sought to keep themselves as pure as possible, and that of the slaves, who must always expect to be offered to the war-god, or to be sold as an expiation for some wrong done. This was the social state of the inhabitants of the Philippines when the Mahometans and the Spaniards, from two different sides, sought to introduce their religions into the land."

We have thus given the account of the chief aboriginal tribes of the Philippines, so very little known to ethnographers, in the language of Dr. Semper, for we regard it as an important contribution. This gentleman lived some years in the islands, and during his various journeys came into intimate contact with these tribes, and studied them carefully, evidently with a mind well prepared for such study. Their moral, social, and religious state was that which engaged his principal attention. Their physical peculiarities obviously attracted less of his notice, which gives rise to some defect in his picture, and was, no doubt, occasioned in a degree by his too readily conceding to general terms, such as "Malay races." Under that designation the inhabitants, not merely of the Philippines, excepting the Negritos, but of many other large and populous islands, are classed pell-mell, as those of the vast islands of Borneo, Sumatra, Java, Celebes, and innumerable small islets. The study and discrimination of these numerous races will afford profitable labour for many observers. The example set by Dr. Semper is of great value. It also proves him to be an accomplished anthropologist, from whom much is to be hoped. It is not surprising that, on his return to his Fatherland, he should have been selected for the important office of secretary to the German Anthropological Society.

ART. VII.—THE PEOPLE OF THE ISLE OF MARKEN.

BY DR. CHAENOCK, V.P., F.S.A.*

THE Isle of Marken is situated in the Zuider Zee, off the coast of North Holland, ten miles north-east of Amsterdam. It is reached by ferrying across the IJ, and by taking the road to Broek and Monnikendam,† whence it is distant about three miles. With a fair wind, the island may be reached by a fishing-smack from the latter place in half an hour; but when the wind is unfavourable it may occupy two or three hours. It took me two hours and a half to cross, and one and a quarter to return. When the Zuider Zee is frozen over, the communication is kept up by means of sledges. The island is three-quarters of a league in length by a quarter of a league in breadth. The entrance to the harbour is difficult, and was crowded with fishing-smacks. The houses are of wood, and built on artificial mounds, the island being liable to inundations, when, in winter time, the Zuider Zee is not frozen over. On such occasions, the people are sometimes up to the middle in water.‡ There is only one village. The Markeners are now on the increase. The *Edinburgh Gazetteer* puts down the population in 1827 at 800; Gaspari gives the numbers in 1850 at 571; Johnston§ makes it 733 in the same year; but the two latter are probably founded on old returns. Meyer|| makes it 600 in 1851, but he also queries it at 800. The people now number 1100, but some of them are obliged to reside at Monnikendam, from want of house accommodation on the island. Only two of the inhabitants are from the mainland; the doctor, and one of the two bakers.

The people are tall, broad-shouldered, strong, and rather good-looking; and are accounted as giants by the mainlanders. One of them, who measured six feet two inches, informed me that he was not the tallest man in the island. I accosted a fine strap-

* Read before the Anthropological Society of London, Nov. 1, 1870.

† *Die Gegend des Zuydersees zwischen diesen Insel und dem festen Lande heisst Goud-Zee.* Gaspari, *Erbeschreibung*: 1820. Band xi.

‡ In 1825, the island was visited by a hurricane, which caused great damage. *Dict. Univ.* Bruxelles: 1839.

§ *General Gazetteer.*

|| *Das Grosse Conversations-Lexicon.* Hildburg: 1851. Band xx.

ping fellow, who stood quite five feet ten inches, whom I should have taken for twenty-eight years of age. He told me he was only eighteen. The head is well formed ; the nose broad and long ; the eyes deeply set ; the eyebrows shaggy ; the mouth large ; the *arcus oralis* is strongly defined. The hair is very light, almost yellow ; the face bronzed. The women have broad faces, large mouths, compressed lips, and good eyes. They do not show themselves much, and rather avoid strangers. At one of the houses, I was introduced to an enormously fat woman, who had been exhibited a few years since at the Amsterdam kirmes. She was quite six feet high, and was thirty-six years of age. A pamphlet lately published at Amsterdam states, also, that, at one of the kirmes, was shown a Marken child, which was said to be only three months old and to weigh several hundred pounds ; but this is certainly a very great exaggeration. The Markeners are intelligent, polite, agreeable, and sober. They occasionally drink schiedam, but not beer.

The male attire consists of a double-breasted, closely-fitting jacket, over a red flannel waistcoat, which is partly visible, wide petticoat trousers, of dark cloth, and an embroidered neck-tie, of a light colour, adjusted in a somewhat feminine style. They sometimes wear ordinary shoes, but frequently only woollen nether stocks, which are made by the women. The dress of the women is as follows : White bodice, over the sleeves of which, from the elbow to the wrist, is a dark brown stuff. A violet coloured spencer covers the bodice, and over the former is a garment, shaped like the bib of an apron, and reaching from the clavicle to the waist in front, and from the scapulæ to the waist behind. This garment is coloured green in front and red behind, or the reverse, and is embroidered in Marken style. A dark stuff dress reaching to the ankles is worn over a white petticoat. They have coarsely knitted blue stockings, and leather shoes with buckles. A white shako, with an insertion of coloured ribbon, forms the head dress ; and a coloured kerchief is worn loosely round the neck. The out-door dress is a striped jacket of coarse stuff, which is worn loosely over the spencer. The front hair is cut square, and on either side hangs an Alexandra curl. The second and third fingers of the left hand are usually adorned with several rings. The dress is peculiar to the

women of the island, and of those of them who are compelled to live on the mainland.

The interior of the dwellings is clean, and they are well stocked with furniture. The walls are adorned with bright copper dishes and pans. The beds are made in alcoves; some of these are so high up that they can only be reached by steps. They are enclosed by curtains, and contain great piles of cushions and pillow-cases. The latter, and also the coverlets, are worked in Marken style. These beds are seldom used. The Dutch call them *pronk-beds*—i.e., state-beds.

I was informed that the proportion of males to females is two to one. Prostitution is unknown. It, however, occasionally happens that the first child is born before the usual period of gestation. Marriages are usually contracted at about twenty-two years of age. There are but few marriages between the people of the island and those of the mainland. The proportion is about three in a thousand. The burgomaster is married to a mainlander. The marriages are prolific; six, seven, and eight children are very common. One man stated that he had been married thirteen years, and that his wife had had nine children. In 1869, the births numbered forty-six. Of males born this year only two are living: I was not able to learn the reason. The Markeners often attain seventy and eighty years of age. They are very free from diseases; the doctor being usually called in only in accouchements. Five years since, there were thirty-six deaths from cholera. The people are nearly all Protestants. There is one church, and one missionary establishment; the latter is held in a private house. The people are very fond of theological disputes; are superstitious, and still believe in ghosts and witches. Education is compulsory, and most of the people can read and write. They speak a patois; but any one conversant with the Dutch language can understand them. The island does not produce any vegetables; and the only trees are two apple trees in the garden of the burgomaster. Nearly all the provisions are brought from the mainland. There are four small farms, one of which supports eighty sheep; another fourteen cows. Nearly all the male population are engaged as fishermen, or as fish-salters. In summer, they set sail on Monday, and return on Friday night; in winter, they leave on Sunday night, and return on Saturday night. The children amuse them-

selves with tame sea-mews, each of which has an iron ring round its neck.

The chief diet is fish; but in the month of November, at the time of the *slaght*—*i.e.*, “the slaughtering”—each family purchases a quarter of an ox or a pig. While at sea, they eat flour-cakes mixed with salt water, fried with lard, and sprinkled with syrup. They pay no tax as fishermen, but are taxed as carriers. Military service, and the decay of the fishing trade, have deprived the Markeners of much of their originality.

It is probable that the island originally formed part of the mainland; but whether it arose through an inundation which caused the Zuider Zee, or is of more ancient origin, is doubtful. According to some, this inundation took place in 1413; but this date probably refers to the latest inundation. Others state that the Zuider Zee was formerly only a lake (*Lacus Flevo*), and that the latter became joined to the North Sea by an inundation in 1282. Godefroy, a monk of St. Pantaleon, says, in his *Chronique*, that this took place in 1170, and that the ocean broke into Friesland, and inundated most of the country towards Staveren. But Ubbo Emmius, in his *Histoire de Frise*, shows, on the authority of Emon, Abbé of Verum, who lived in Friesland at the time of Godefroy—*i.e.*, in the thirteenth century—that the great inundation happened towards the year 1225. Lamartinière, referring thereto, says this inundation formed, with Lake Flevo, a sea of thirty leagues in length, which is called Zuider Zee—*i.e.*, South Sea. He says, further, that the Flavio lake, which extended as far as a point opposite Eastern Friesland, is mentioned by Mela. It is quite possible, therefore, that the island of Marken may have been in existence at the time of Mela, and also of Drusus, who, by turning the course of the Ijssel, formed the lake in question.

The Dutch usually call the island *Mar-ike*, not *Marken*; hence the French orthography *Markea*. The name would seem to be derived from some district on the mainland, in which it is included, just as the Isle of Wight is reckoned a part of Hampshire. This is confirmed by Johnston's *Index Geographicus*, which gives: “Marken Isle, North Holland, 52.27 N. lat., 5.8 E. long.; Marken, North Holland, 52.27 N. lat., 5.7 E. long.” The name of the district may mean “limit” or “boundary”. Marcken, or Marken-Hared is the appellation of a place in West Goth-

land; there is Markendorf in Brandenburg in Prussia; Mareke, a village and commune, West Flanders; and Marcq in Hainault. Or the district may have been named from a river. There is Marke, a river of Oldenburg; Marck, or Merck, a river of Belgium, prov. Antwerp. The exact date of the first settlement of the Markeners on the island is doubtful; but all agree that it was as early as the seventeenth century. It has lately been proposed to drain the Zuider Zee, but there is no prospect of this being attempted at present.

ART VIII.—SCHOPENHAUER AND DARWINISM.

THOSE of our readers who remember the remarkable article in the *Westminster Review* of April 1853, on Arthur Schopenhauer, the Frankfort sage, as he has been styled, under the title of "Iconoclasm in German Philosophy", or those who may chance to have read the present writer's series of articles on the same subject in the *Parthenon* (1862), will not require to be told that Schopenhauer was one of the most original thinkers of this century, and not less distinguished as a lucid writer. The son of a highly cultivated and wealthy banker and of a gifted mother, herself a writer of eminence, who, in the early period of her married life, enjoyed the friendship and counsels of Dr. Jameson, the chaplain to the English colony at Dantzic, his education was a desultory and many-sided one, but, from these very circumstances, of a liberal and cosmopolitan, as well as of a matter-of-fact, character. It may be said to have begun, as Rousseau demands, even before his birth; for his father took his young wife to England while in an interesting condition, being desirous that the expected young citizen of the world should be born on English soil, and thus acquire the birthright of a Briton. The delicate state of the mother's health, however, necessitated her return to Dantzic, at that time a free town, where Arthur Schopenhauer was born on February 22nd, 1788. In March 1793, his parents emigrated to Hamburg, during their twelve years' residence at which they travelled

about a great deal, everywhere taking their young son with them, whose education as a citizen of the world was one of the objects of these travels never lost sight of by the father. At nine years of age, he was left with a correspondent of his father's, a M. Grégoire at Havre, where for two years he shared the private lessons of young Grégoire, a boy of the same age as himself. There he spent the happiest time of his boyhood, and became, what the father wished him to be, quite a Frenchman. He returned to Hamburg in the spring of 1803. His parents, chiefly with the intention of weaning him from his love of science, set out with him on the grand tour. They made a six months' stay in England; and, during the excursion of the parents to the north of the island, young Arthur was entrusted to the care of a clergyman at Wimbledon, and here he laid the foundation of his subsequent familiarity with the language and literature of the nation with which his mind owned kindred. At New-year in 1805, he was apprenticed as a merchant to Senator Jenisch at Hamburg, with whom, notwithstanding his intense dislike to commercial life, he continued for some time after the death of his father in 1805. Fortunately, he was rescued from this position by the advice of Fernow, the editor of Dante, and the intimate friend of Arthur's mother, who showed him a letter from her son, in which he gave utterance to the inner discord generated by despair of himself. He was now sent to the Gotha Grammar School, and thence to Weimar, from which he proceeded to Göttingen, entering himself at first as a medical student, but soon after, under the guidance of G. E. Schulze, author of *Ænesidem*, exchanged the study of medicine for that of philosophy. In 1811, he repaired to Berlin, attracted thither by Fichte's fame. Having completed his terms at the University, he retired to the charming Rudolstadt Valley in Thuringia, and here he composed his inaugural dissertation, "The Fourfold Root of the Proposition of the Sufficient Cause", for the purpose of taking his degree. The young doctor soon after enjoyed the inestimable advantage of an intercourse with Goethe, whose penetrating judgment easily discerned the superior order of his young friend's intellect.* Among philosophers, too, his treatise excited much attention; certainly more than his great work, published November 1818, *The World as*

* See Goethe's Correspondence with State-Councillor Schultze, p. 149.

Will and Conception. He sent an early copy of the latter to his friend Goethe, whereupon his sister Adele writes to him (he had since left Dresden for Naples, whither the proofs had followed him): "Goethe received your work with great delight, forthwith cut the thick volume into halves, and instantly began reading in it. An hour after, he sent me the enclosed slip, and a message to say he thanked you very much, and believed the book to be good. As he always was so lucky as to light on the best passages in books, he had read the pages set down in the slip, and been very much pleased with them. He intends very soon to write you his opinion more fully; meanwhile he charges me to tell you so. A few days after, Ottilie (Goethe's daughter) told me her father sat over the book, reading it with a zeal such as she had never yet witnessed in him. He said to her he now had a treat for a whole year; for now he would read the book from beginning to end, and thought it would take him that space of time to do so. He then told me he rejoiced very much at your being still so attached to him, having had some difference with you about the theory of colours. What he particularly admired in your book was the lucidity of diction, though your language differed from that of others, and one must accustom oneself to call the things by the names you gave them. But once having got this knack, and knowing that horse is not horse but *cavallo*, and God perhaps *Dio*, or something else, one could read on easily enough. He also liked the whole arrangement very well, only the ungraceful size would not let him rest, and so he fancied to himself the work consisted of two parts. When next I go to see him, I hope to speak to him alone again, and perhaps he may say something more satisfactory; at least, you are the only author whom Goethe reads in this way, and with such zeal." Some time after, Jean Paul said of this work: "An ingenious, philosophical, bold, many-sided work, full of sagacity and depth of thought, but with a depth often comfortless and bottomless—comparable to a melancholy lake in Norway, upon which, owing to its dark encircling wall of steep rock, one never beholds the sun, but deep below only the starry day-sky, and over which neither bird nor wave passes." Nevertheless, besides calling forth a few reviews, the work, on its first appearance, was almost wholly neglected.

As it is not my purpose here to write Schopenhauer's bio-

graphy, I pass over his various migrations from the time of his brief sojourn at Berlin, where he made an unsuccessful attempt, as lecturer on Philosophy (*Privatdocent*) in the University, to gather hearers about him, Hegel being at that time at the zenith of his fame, to his finally settling, in 1833, at Frankfort-on-the-Maine, where, to the day of his death, September 21, 1860, he lived, as his biographer, W. Gwinner, says, "among shopkeepers and money-makers—aye, even among the doctors—of this excellent city, unmolested and unknown."

Besides his great work, subsequently enlarged to two volumes, he published a treatise on *Light and Colour* (of which a third edition has just been issued), in which he supports, in the main, Goethe's theory of colours; an essay on *The Will in Nature*, a treatise on the freedom of the human will (which obtained a prize from the Royal Norwegian Society of Science at Drontheim, in 1839), and another on *The Basis of Morality* (a second edition of both of which he prepared shortly before his death); and, lastly, *Parerga and Paralipomena*, being miscellaneous philosophical essays, in two volumes, of which a second enlarged edition was published in 1862, edited by Dr. Julius Frauenstaedt, who has inherited the copyright of all Schopenhauer's works. If, in addition to these performances, we mention a translation of Balthasar Gracian's *Oracula Manual, y arte de Prudencia*, which was found ready for the press among his posthumous papers, and published in 1862, we have enumerated all that emanated from his pen in a life of seventy-two years. For one whose pecuniary means enabled him to live an independent life, wholly devoted to study, the quantity of his writings may appear very small, but then the quality is all the higher. In these few volumes he contrived to compress more original thought, and, what is of greater importance, more truths, than are to be met with in the works of the far more voluminous, and the very reverse of luminous, philosophers, whose names for a long period entirely eclipsed Schopenhauer's; but his day did come at last, and he is now fully recognised as one of the greatest lights among the philosophers of all countries and all times.

I believe I am not saying too much that it was mainly owing to the article in the *Westminster Review* referred to above that his name was at length blazoned forth, even to the German world, and that he at last began to be studied and appreciated.

For that article was translated by Frauenstaedt into German, and, being published in the *Voss Zeitung* at Berlin, created much sensation at the time. The eyes of the German public were opened by the English reviewer to the great thinker that lived among them, and had been so long unnoticed. Then it was that Frauenstaedt popularised his philosophy in a series of *Letters on Schopenhauer's Philosophy*, to which the said article served as an introduction; and it may be gratifying to the writer of the *Westminster Review* article to hear that Schopenhauer was highly satisfied with his *exposé* of his system, and referred me to the extracts as models of translation. In attempting to give to the reader who has not seen the article in question an idea of what Schopenhauer teaches, I might simply refer to the title of his great work, and say, there is all the explanation you require; or I might say his system is a compound of Kant, Plato, and Buddhism, and, indeed, his own words, in his preface to the first edition of *The World*, might seem to justify such a statement.* But neither mode of proceeding on my part would be doing justice either to Schopenhauer or to the reader. The title tells much, but not all; and Schopenhauer's own statement might suggest the erroneous belief that his system was a species of eclecticism, having no claim to any originality; that he had culled some thoughts from various quarters, and strung them together into some more or less harmonious system, to be palmed upon the public as something new. Whereas it is much nearer the truth to say that, like Shakespeare, he drew from various sources, and has been candid enough to name them at the outset, not hidden away in a corner or at the end of the volume; but he has added so much of his own, and amalgam-

* I may mention that had Schopenhauer known more of Judaism than is contained in its most ancient records, the Sacred Scriptures; had he known what the Jewish doctors say in their commentaries on the same; had he been acquainted with the system of Solomon ben Gebirol, the Spanish poet and philosopher of the eleventh century, who had so long been concealed under the name of Avicbron, until the late Solomon Munk, as librarian of the French Imperial Library, succeeded in discovering his identity with that supposed Arab philosopher, he would, in fairness, have had to add that, more than anywhere, the germ, or rather the main feature, of his doctrine might be met with among Jewish philosophers—with this difference, however, that they regard as an attribute, a portion of divinity, what with him is divinity itself, if such a term found any place at all in his system.

ated the ideas borrowed into so wonderful a whole, that it strikes every one as a new creation, and has, indeed, all the merits of one.

In now proceeding to my preliminary task, of conveying to the reader an outline—though but the merest, faintest outline—of the system, I am happy to be able to state for his satisfaction, and as a guarantee of the accuracy of my summary, that it is one which had the approval of Schopenhauer himself. It originally appeared as an introduction to a paper of mine on Schopenhauer's Philosophy of Music in Brendel's *Anregungen*. On a subsequent occasion, Schopenhauer having proposed me as a fit person to write an article on his system for the *Révue Germanique*, on behalf of which some one applied to him, he advised me to reproduce that summary in the article, adding, "it is no plagiarism to borrow from oneself."* The summary thus certified by the hand of the master ran as follows.

"The final result of Kant's philosophy, expressed in the concise terms, was the proposition, so humiliating to human cognition, but, at the same time, so fertile in consequences, that we can know only *phenomena*, or the outward appearances of things, but not the *noumenon*, or the thing in itself. Fichte's Idealism, Schelling's Philosophy of Identity, and Hegel's Absolute, originate alike in that proposition; but while these various systems were successively and simultaneously contending for sway, and Hegel's especially had all but universal homage paid to it, Schopenhauer had, silently and unnoticed, thought out Kant's great thought, and lifted the veil which had till then hidden the thing in itself from our mental eyes. It is remarkable and characteristic of the imperfection of the human intellect, however high the degree it may have attained, that Kant, who so happily discovered and so correctly showed how it is only by virtue of our own *à priori* ideas of space, time, and causality, that we are able to have cognition even of the appearances of things, should never have suspected that we carry within ourselves the key for the other side of the world, for the thing in itself. The fact is, the world had, since Descartes and his famous *Cogito, ergo sum*, been too much prepossessed by the idea of finding everything in the intellect, even for a Kant to have been able to emancipate himself

* See Arthur Schopenhauer's Letters to the present writer in R. Printz's *Deutsches Museum*, No. 34, 1865, p. 287.

from the delusion. Be that, however, as it may, Schopenhauer wrote his immortal work, *The World as Will and Conception*, inverting the order of things by giving the will the priority, and assigning to the intellect only the secondary rank, and thus breaking the spell which had till then held the minds of men bound. 'All philosophers', says Schopenhauer, 'have erred in giving the intellect the priority.' According to him, it is the will, that vital, real, and indestructible substance of man and all beings, which, however, is unconscious, to which precedence must be allowed. The will is metaphysical, the intellect physical; *i.e.*, the production of the brain. The will, which is identical in all beings, while the intellect varies widely in degree, not only among the different beings, but among men, is *the thing in itself*. In perceiving it in ourselves, we also perceive the world as will; but all objects, our own bodies included, in which the will becomes manifest to our eyes, alone depend on, or are the product of, our conception, and form the world as conception. Now, while the unconscious, unknowing will remains immutable in all beings and things, it nevertheless *objectivates*, or manifests, itself by degrees, according to the *principium individuationis*, and thus the world of phenomena, or the chain of beings, from the great heavenly bodies to man, in whom the intellect, as the light of the will, attains its highest development, enters into our conception, and deludes it with the idea of their forming the true eternal being. Thus, the veil of Maja (as the ancient Hindoos designate it) is cast over our eyes, and conceals from us the true essence of things. We stand amazed before the phenomena, incapable of deciphering either them or our own existence. Then it is that we turn either to Art or Philosophy; for both equally strive and labour to solve the problem of existence—the former by means of contemplation, the latter by means of reflection. Art proceeds from the ideas: these, the eternal ideas, which dwell in the things, and, unconsciously to it, float before the will in the process of its objectivation or manifestation, are the true and only sources of every genuine work of art; and, as the artist himself contemplates them, he endeavours, without, however, being conscious in the abstract of the purpose and aim of his work, by means of it to reproduce those ideas."

Here, then, are, *in nuce*, the principles of Schopenhauer's meta-

physics and æsthetics, and it remains but to give the reader some slight idea of his ethics. If in the former, he showed and acknowledged himself, as regards the starting points, a follower in the one of Kant, and in the other of Plato; in the latter, he takes his stand wholly on Buddhism, though not without coinciding at the same time with Christianity, the religion of sorrow, as Thomas Carlyle has so felicitously designated it, in his views of life. These are of the gloomiest, darkest, and his description of the misery of life, painted in the colours of a Rembrandt, and grand as the outlines of a Michael Angelo, has nothing to equal it in all literature, except the first portion of the Book of Job. He is an avowed pessimist;* and nothing can reconcile him to the optimism of Judaism but the story of the Fall of Man. The will having, by the light of the intellect, recognised life to be "suffering," and nought but "suffering," no longer *wills* life, but on the contrary, desires to abnegate it. This is the turning point of his doctrine. He does not, however, recommend suicide, except in particular instances, for the simple reason that an individual suicide could never put an end to existence, to life in general. What we have to do for ourselves is, to seek the extinction of desires, quietism, such as the mystics of Christianity; more especially, however, as Buddhism has taught it, in which latter religion it is called *Nirvâna*, as opposed to *Sansâra*, words which for English readers, with Max Müller's works before them, will scarcely need an explanation. From the same quarter he borrows the fundamental principle of his ethics, "compassion." Suffering man looks around him, and recognising the same will that constitutes his own vital principle in all other beings, says to each, *tat tvam asi* ("thou art this"); and compassion with the sufferer dictates charity and kindness to him. The attentive reader need not be reminded that Schopenhauer might have found the same principle, substitute only "love" for "compassion," much nearer home, for the old biblical precept, "Love thy neighbour as thyself," on which, as the Jewish sages remark, the whole law depends, conveys the same doctrine. But, as we have

* If the *Saturday Review*, some time since, in a casual allusion to Schopenhauer, ascribed the origin of his pessimism to the neglect from which he suffered for so long a period, such an opinion is at once disproved by a reference to the first edition of his great work, where it will be found that he entertained those gloomy views of life before he experienced that neglect.

said before, chiefly owing to its *πάντα καλὰ λίαν* or its optimist character, Schopenhauer had an antipathy to Judaism, and must needs go to other sources for a support of his theory. The reader must, however, not suppose that these three leading features of the system form even an adequate outline, let alone conveying to him even the slightest idea of the vigour and clearness of thought and language that distinguish this philosopher above all his German predecessors. Reading him has justly been likened to plunging into a cold bath; it is so refreshing, so invigorating, whatever may be the effect on us of his final precept—aiming at Nirvâna. Like every complete system that seeks to explain the world, his, too, embraces the world, and ramifies into all questions connected with human life, including law, politics, the arts and sciences, and so forth. And thus it is that he also came to treat the question of sexual love, which we have chosen as the theme of the present article. He devotes a special chapter to the question in the second volume of his great work, which forms a supplement to the first, commenting upon and amplifying the doctrines contained in the latter. I shall now place before the reader the substance of that remarkable chapter, being a commentary on that in the first volume, headed “Affirmation and negation of the will.” Sexual love of course springs from the former as its metaphysical root, and, as Schopenhauer has justly compared his system to the ancient city of Thebes with its hundred gates, each of which led into the middle of the city; because every part of it, like the radius of a circle, emanates from, and converges into, the centre, the reader may now enter by the portal I am about to open. At the same time he will find the answer given to the question, What is the real cause of the undying interest with which sexual love is invested? equally novel and striking. He will find that it clashes with the mythological representation of Cupid as a blind, or at least, bandaged god, and with the familiar saws about the blindness of love. All these he must dismiss from his mind as preconceived notions of a subject never thoroughly examined before, and though both tradition and daily experience seem to favour them, he must remember that many other erroneous notions, entertained for centuries, had finally to give way before the light of truth, and that, in this instance, the symbol and the sayings are, after all, only figurative. What connection the

matter has with Darwinism he will presently see. First let us hear Schopenhauer.

"We are accustomed," he says "to see poets chiefly occupied with the description of sexual love. It is, as a rule, the principal theme of all dramatic works; not less so of by far the greater portion of lyric, and equally so of epic poetry; not to speak of the piles of novels, which, in all civilised countries of Europe, crop up every year as regularly as the fruits of the soil. All these works are, as regards their main topic, nothing but many-sided, short or detailed, descriptions of the passion in question. Indeed, the most successful delineations thereof, such as *Romeo and Juliet*, the *New Héloïse*, *Werther's Sorrows*, have attained undying fame. If Rochefoucauld is, notwithstanding, of opinion that with passionate love it is the same as with ghosts—everybody talks of it, but nobody has seen it; and if Lichtenberg disputes and denies the reality and naturalness of that passion, they are both greatly in error. For it is impossible that a subject alien to human nature should, at all times and indefatigably, be represented by the genius of the poet, and be received by mankind with unchanged sympathy, since without truth there can be no beauty in art. 'Rien n'est beau que le vrai, le vrai seul est aimable.' (Boileau.) No doubt, however, a wide, though not daily experience, confirms that what in general occurs only as a strong, yet still not indomitable inclination, may, under certain circumstances, grow into a passion surpassing every other in vehemence, and will then set aside every consideration, and surmount every obstacle, so that, for its gratification, life itself is unhesitatingly risked, nay, if such gratification be absolutely unattainable, even sacrificed. The *Werthers* and *Jacopo Ortises* do not exist in novels only; but every year produces at least half a dozen similar cases—*sed ignotus perierunt mortibus illi*—for their sufferings find no other chronicler but the coroner's clerk or a newspaper reporter. Still greater, however, is the number of those whom the same passion leads into the lunatic asylum. Lastly, every year produces a case or two of the joint suicide of a loving couple, whose union is prevented by circumstances. As to the lower degrees, and the mere touches of that passion, every one has them daily before his eyes, and, if he is not too old, mostly, too, in his heart. Neither the reality, then, nor the importance of the matter can be doubted, and hence,

instead of being surprised that a philosopher should, for once, make this constant theme of all poets his own, one ought to wonder at it that a matter which plays so important a part in human life should scarcely have been taken into consideration at all by the philosopher, and be still an unworked material. The one who has written most about it is Plato, especially in his *Symposium* and *Phædrus*; but what he says on the subject does not extend beyond the domain of myths, fables, and witticisms, and, for the most part, too, concerns only Greek boy-love (*παιδεραστία*). The little that Rousseau says on our theme, in his *Discours sur l'Inégalité*, is incorrect and insufficient. Kant's discussion of the question, in the third section of the treatise on the Sense of the Beautiful and the Sublime, is very superficial, and without any real knowledge of the subject, therefore, partly too, incorrect. Spinoza's definition only excites hilarity by its exceeding naiveté. He says (*Ethics* iv, Prop. 44, Dem.), *amor est titillatio, concomitante idea causæ externæ*. I have, therefore, no predecessors either to draw upon or to refute."

All *sexual love*, then, however ethereal it may appear, has its sole root in *sexual instinct*, nay, is absolutely only a more definite, specialised, aye, in the strictest sense individualised, sexual instinct. If, bearing this in mind, we consider the important part which sexual love, in all its gradations and shades, plays not only in fiction, but in the real world, where, next to the love of life, it shows itself the strongest and most active of all motives or springs of action; constantly absorbing half the strength and thoughts of the younger portion of mankind; every hour interrupting the most serious occupations; sometimes, for a while, turning even the wisest heads; not fearing with its frivolity to disturb the negotiations of statesmen and the investigations of scholars; contriving even to slip its billets doux and lovers' curls into ministerial portfolios and philosophical manuscripts; daily causing mischief; dissolving the dearest and firmest ties; making victims now of health or life, now of riches, rank and happiness; aye, making the honest unscrupulous and the faithful man a traitor; thus, on the whole, showing itself a spiteful demon, who is at pains to pervert, confound and overturn everything—if one considers all this, one cannot help asking, wherefore all this ado? wherefore all this stir and rage, this anxiety and misery? After all, there is nothing in it but that every one meets with his mate

—why should such a trifle be made so much of and incessantly interrupt and throw into confusion the course of well-ordered human life? But the spirit of truth gradually reveals the answer to the earnest inquirer. It is not a trifle that is at stake; on the contrary, the importance of the matter is quite in proportion to the earnestness and zeal displayed in its pursuit. The final aim of all love-intrigues, be they comic or tragic, is really of more importance than all other ends in human life, and hence, well worthy of the deep earnestness with which every one pursues it. What it all turns upon is nothing less than the *composition of the next generation*. *Not only the existence but the nature, constitution and outward features of those who are to appear on the stage after us are determined by these seemingly frivolous love-intrigues.* This is the key to the problem; we shall, in its application, become more fully acquainted with it by tracing the various degrees of love, from the most transient inclination up to the strongest passion, when we shall see that the difference of degrees originates in the degree of individualisation in the choice. All the love-intrigues of the present generation taken together are therefore its serious *meditatio compositionis generationis futuræ*. It is not the weal or woe of any one individual, but that of *the human race to come* which is here at stake. Inexplicable as is the special and exclusively peculiar individuality of each human being, the special and individual passion of two lovers is equally so, nay, at the root they are identical, the former being *explicite*, what the latter was *implicite*. Indeed, the moment in which the parents begin to love each other,—“to fancy each other,” as the English admirably term it—may be regarded as the really first origin of a new being and the true *punctum saliens* of its life. This new individual is in a certain measure a new (Platonic) idea: now as all ideas strive with the greatest vehemence to realise themselves, eagerly seizing the matter which the law of causality distributes among them; so this special idea of a human individuality seeks its realisation with the greatest eagerness and vehemence. This eagerness and vehemence is represented by the desire of the future parents for each other. This desire has innumerable degrees, ranging between the two extremes, which may be designated as *Αφροδίτη πανδημος* and *οὐρανία*: in its nature, however, it is everywhere the same. In degree it will be strong in proportion as it is

individualised, *i.e.*, according to the degree in which the beloved individual, by virtue of its composition and qualities, is exclusively qualified to satisfy the lover's wishes and that want of his which is determined by his own individuality. What this depends on we shall presently see.

In the first instance and essentially the amorous inclination is directed towards health, vigour and beauty, consequently towards youth, because the will primarily desires to preserve the general character of the human species as the basis of all individuality. Every-day love does not go much beyond these requirements; to them are next added more special ones, which we shall presently point out in detail, and with which, where satisfaction is expected, the passion increases. But the highest degrees thereof arise from that adaptation of the two individualities to each other, by virtue of which the will, in the character of the father and the intellect of the mother, in their conjunction, may produce that individual, according to which the will to live in the abstract, as realised in the whole species, feels a desire, proportionate to its intensity, and therefore as much surpassing the bounds of a mortal heart as the motives of such desire lie beyond the sphere of the individual. This, then, is the soul of really great passion. Now the more perfect is the mutual adaptation of two individuals to each other in the various respects hereafter to be examined the stronger will be their passion. There not being two wholly equal individuals, there must be for every man some woman most perfectly corresponding to him, always understood with respect to that which is to be produced. The chance of their meeting in life, however, is as rare as real, passionate love is. But, meanwhile, the possibility of the latter existing in every individual, renders its delineation in works of fiction intelligible to us.

And now for a more thorough examination of the matter. Egotism is so deep rooted a quality of any and every individuality, that selfish objects are the only ones safely to be relied on, if one wishes to rouse an individual to action. It is true, the race has a prior, nearer and greater right to the individual than decaying individuality has; nevertheless if the individual is to exist himself and even to make sacrifices for the continuance of the race, the importance of the matter cannot be rendered so comprehensible to his intellect, which is always bent only on

individual objects, as to act according to that importance. Hence, nature, in such a case, can attain her end only by implanting within the individual a certain illusion, by means of which he fancies good for himself what in truth is so only for the race. This illusion is the instinct. This is, in by far the most numerous instances, to be looked upon as the *sense of the race*, which represents to the will what benefits the race. But the will, having here become individualised, has to be deluded in such a manner as to perceive by the sense of the individual what the sense of the race holds out to it, thus fancying itself pursuing an individual end, while, in truth, it is pursuing *general* ends, the adjective being here taken in its primary sense. As for the external appearance of instinct, we best observe it in animals, in which it plays the most important part; but as to its internal process we can only, as in every similar case, come to know it from ourselves. Now, it is generally thought, man has scarcely any instinct, or, at most, in so far as the new-born babe seeks and seizes hold of its mother's breast. But, in fact, we have a very definite, distinct, nay, complicated, instinct, expressed in the nice, serious, and most fastidious *selection* of the other individual for our sexual gratification. With this gratification in itself—*i.e.*, in so far as it is a sensual enjoyment resting on the urgent craving of the individual—the beauty or plainness of the other individual has nothing to do. The regard, notwithstanding, so assiduously paid to these, together with the careful selection springing therefrom, has, then, manifestly no reference to him who selects, though he fancies it is so, but to the true object, to the *being* to be produced, so that in it the type of the race may be preserved as pure and faultless as possible. The fact is, thousands of physical accidents and moral obstacles cause a variety of degeneracies in the human figure; nevertheless, its true type, in all its parts, is constantly being restored, thanks to the guidance of the sense of beauty, which, in the average, is the principal incitement to sexual desire, and without which the latter is degraded into a loathsome craving. Accordingly every man will, in the first instance, give the preference to, and eagerly covet, the possession of the handsomest individuals—*i.e.* such as have the type of the race expressed in them in its greatest purity; but next he will particularly seek in the other individual for those perfections which he lacks himself—nay.

will even find those imperfections handsome which are the opposite of his own. Hence, short men will select tall women, the fair love the dark, and so forth. The giddy rapture which seizes a man at the sight of a woman, of a beauty adapted to him, and deluding him with the idea that a union with her would be the highest good, is nothing but the *sense of the race*, which, recognising its clearly expressed type, desires to perpetuate it by means of that individual."

Passing over some deductions with regard to the instinct of animals, which here finds its explanation, and omitting some remarks on the deception practised upon the individual by the delusion referred to, which remarks conclude with an apt quotation from Plato, who, in his *Philebus* (p. 309), says ἡδονὴ ἀπαντῶν ἀλαζονεστατον (*voluptas omnium maxime vaniloquor*), I proceed to our author's closer analysis of the principle of selection indicated above.

"The first consideration", he says, "that guides our selection and inclination is *age*. Here the preference is decidedly given to the period from eighteen to twenty-eight years. A woman past bearing can no longer charm, but, on the contrary, disgusts us in sexual respects. Youth without beauty has still some attraction; beauty without youth none. Obviously, the intention unconsciously guiding us is the possibility of procreation in general; hence every individual loses his or her charm for the opposite sex in proportion as he or she is remote from the period fit for procreation or conception. The second consideration is that of *health*; acute diseases are but a temporary interference; chronic complaints, or, worse than these, a cachectic condition of body, repel, because they affect the offspring. The third consideration is the osseous frame, that being the basis of the type of the race. Next to age and disease, nothing is more repulsive than deformity; even the handsomest countenance cannot compensate for it; on the contrary, the plainest face with straight figure is preferred. Again, every disproportion of the figure or limbs strongly offends us; so does lameness, too, unless the consequence of some accident. On the other hand, a strikingly handsome figure can make up for many other defects: it enchants us. To this may be added the high value all attach to the smallness of the foot; the reason is, its being an essential feature of the race; indeed, *tarsus* and *metatarsus*, taken together,

are smaller in man than in any animal, which is connected with his upright gait. The teeth, too, are of moment, being essential for the assimilation of food, and their quality being especially hereditary. The fourth consideration is a certain abundance of flesh, or a predominance of the vegetative function, promising, as this does, copious nourishment for the foetus; great leanness, therefore, repels. For the same reason, a full bosom is uncommonly attractive; excessive fatness, however, excites disgust, because instinct, not our mind, tells us it indicates sterility. The last consideration (though the first attraction) is beauty of countenance. Here, too, the osseous parts are the primary regard; hence the importance of a well-shaped nose. A slight curve of this organ, downwards or upwards, has decided the fate of innumerable females, and justly so, for the type of the race was at stake. A small mouth, too, caused by small maxillæ, is very essential, being a special feature of the human countenance, as contradistinguished from the muzzle of brutes. A receding chin is particularly offensive, because *mentum prominulum* is an exclusively characteristic feature of our species. Last of all comes the regard to the beauty of the eyes and forehead; these being connected with the mental qualities which are inherited from the mother.

“As to the unconscious considerations which determine the inclination of woman, we cannot, of course, state them with equal accuracy. On the whole, the following may be affirmed. They give the preference to the age from thirty to thirty-five, because instinct tells them that these are the years of the highest generative power in man. In general, they care little for beauty, least of all for a handsome countenance. What chiefly attracts them is vigour, and the courage arising therefrom; for these qualities promise vigorous progeny, and, at the same time, a valiant protector for them. The woman can, with respect to the offspring, neutralise every physical defect of the man, every deviation from the type, by being herself without blemish in the same points, or perhaps having an excess in the opposite direction. Excepted therefrom are only the qualities of the man peculiar to his sex, and which, therefore, the mother cannot give the child, such as the masculine build, broad shoulders, narrow hips, straight legs, muscular strength, courage, beard, etc. Hence it is

that women often love an ugly man, but never an unmanly one, because they cannot neutralise his defects."

Again passing over a passage containing an analysis of the mental qualities which form the second class of considerations in sexual love, and which, with the physical ones previously enumerated, constitute the sum of the absolute considerations, or such as refer to all human beings alike, I shall next give a few extracts from the paragraph treating of the relative considerations having reference only to individuals. "Here the intention is to rectify defects, and to lead to a pure representation of the type. Every individual, therefore, loves what he is lacking in. Proceeding from individual constitution, and directed towards such, the choice based on such *relative* considerations is much more definite, decided, and exclusive than that proceeding from the absolute ones: hence a really passionate love will, as a rule, originate in the former, and only the ordinary, slighter inclinations in the latter. Accordingly it is, in general, not exactly the regular and perfect beauties that kindle the great passions. For such a really ardent affection to arise something is required that is only to be expressed by a chemical metaphor—*i.e.*, the two individuals must neutralise each other, even as an acid and a basis turn into a neutral salt.... There is something quite peculiar in the deep, unconscious earnestness with which two young people of opposite sexes, that meet for the first time, regard each other; how searching is their glance, how careful the review all their features and members have mutually to pass. This examination is *the meditation of the Genius of the Race* on the individual possible to spring from them, and on the combination of its qualities. The result determines the degree of their liking and craving for each other. On a subsequent discovery of something that had at first remained unperceived, the passion, even after having already attained a considerable degree, may suddenly be quenched again. In all, then, that are capable of procreation, the Genius of the Race meditates the coming generation. Its constitution is the great work with which Cupid, unremittingly active, speculating and musing, is occupied. Compared with the importance of his great affairs, concerning, as they do, the race and all coming generations, the affairs of individuals, in all their ephemeral totality, are trifling indeed; hence, too, he is ever prepared regardlessly to sacrifice these.

For he bears to them the relation of an immortal being to mortals, and his concerns are to theirs even as the Infinite to the Finite. In the consciousness, then, of administering affairs of a higher nature than all such as concern only individual weal or woe, he pursues them with lofty unconcern, amidst the tumult of war, or the bustle of business-life, or amidst the raging pestilence, aye, even in the seclusion of the convent."

Having thus given an abstract of Schopenhauer's theory, I believe my purpose here will be fulfilled, and, after referring the reader for further particulars to the work itself, where he will find all the objections that may have suggested themselves to him in the perusal fully and fairly met and removed, I now proceed to the second part of my business, which is to show the connection between that theory and Darwinism. But here I can be brief. Or has that connection not already revealed itself to my readers in perusing the foregoing? Has it not become manifest to them that here we have Darwin's theory of "the origin of species by natural selection" brought to bear upon our own race, and carried out to its full length? What Schopenhauer called "the *metaphysics* of sexual love", he might, had he been acquainted with Darwin's theory, have designated by the opposite name, for his own speculations are now proved to be well grounded, and to have a thoroughly *physical*, or quite natural basis. Unfortunately, Darwin's work was published too late in life for Schopenhauer to read it. At least, I presume such must have been the case. The first edition appeared in 1859, I believe, and Schopenhauer died in 1860. Though he read every work connected with his philosophy, Darwin's book cannot have reached him before his death, else he would certainly have mentioned the fact in his letters to me, as the support which his theory obtained by Darwin's could not have escaped him, ever on the alert as he was for facts and doctrines affording such support. This is plainly shown in his *Will in Nature*, where he goes through all the sciences, and records even their latest discoveries, in so far as they bear upon the principle of his system, as expressed in the title. Has Mr. Darwin ever read Schopenhauer? That, of course, is a question I am wholly unable to answer; but he is fortunately living among us still, and may, perhaps, should the question have to be answered in the negative, be induced by this article to look into the works

of a philosopher who has so wonderfully anticipated his theory, and has taught deductively what Darwin has proved inductively. I myself was only engaged in the study of Darwin's work 'when the tidings of Schopenhauer's decease reached me, and thus, even had I then discovered the analogy between the two theories, all discussion with Schopenhauer on the subject was sadly and suddenly cut off. But, to own the truth, that analogy struck me only lately; it flashed upon me all at once; and a maturer consideration of the matter, combined with a perusal of both authors, only confirmed what a momentary inspiration had suggested. Of course, I may presume, or even take for granted, that all my readers have read Darwin; nevertheless, by way of refreshing their memories, I will quote the few passages more immediately bearing upon my theme, though, in truth, the whole work does so. In his speculations, Darwin seems purposely to stop short of man;* but, surely, no one who has read him attentively will for a moment deny that the theory applies to the human species as well, and that the author furnished premises only, as it were, from which to draw our own inferences. Nay, he cannot even be said to make a secret of the real extent to which he would have his principle applied, seeing that he expresses the hope it may "give a new basis to psychology; viz., that of the necessary acquirement of each mental power and capacity by gradation." But to my quotations. That he supports Schopenhauer in the leading principle of his theory may be seen in the following passage: "A kind of selection, which may be called unconscious, and which results from every one trying to possess and breed from the best individual animals, is more important" (than methodical selection). Again, under the heading of "Unconscious Selection", we read: "By a similar process of selection, and by a careful training, the whole body of English racehorses have come to surpass in fleetness and size the parent Arab stock, so that the latter are favoured in the weight they carry."† And now let us hear the passage occurring in the work on Sexual Selection, which I do not adduce here as a clincher, for such is not required, but simply as being the one passage bearing more closely than any

* A work by Mr. Darwin, applying his theory to man, is now in the press.—Ed.

† *Origin of Species*, 4th ed., p. 37.

other upon the topic here treated. "Thus it is," says Darwin (p. 100), "as I believe, that when the males and females of any animal have the same general habits of life, but differ in structure, colour, or ornament, such differences have been mainly caused by sexual selection ; that is, individual males have had, in successive generations, some slight advantage over other males, in their weapons, means of defence, or charms, and have transmitted these advantages in their male offspring." Real love, then, in man and woman is what Schopenhauer has defined it to be ; viz., the law of natural selection implanted within us for the purpose of preserving the type of the human race in its greatest perfection ; it is the instinct of the race or genus that prompts us to covet that particular woman for ourselves, deluding us with the idea of thereby gratifying our own individual desires, but, in reality, benefiting the race to which we belong. Darwin's speculations, based on the inductive method, have now corroborated the deductive theory of Schopenhauer's, and I leave it to the thinking reader to draw his own inferences from the teachings of both the metaphysician and the natural philosopher. It has been justly remarked that, however doubtful may be the progress of mankind in morality, there certainly is an undeniable progress in our consciousness, or knowledge. The light thrown on sexual love by these speculations is undoubtedly a contribution to such progress ; if they have a tendency to render prosaic what has hitherto been the staple theme of all poetry, I can only say, Truth above all things, and our most cherished ideas must be sacrificed at her shrine. She is a jealous goddess, and will not allow a second deity to be worshipped by the side of her. Nevertheless, there is no cause for fear ; for the world-at-large love will still remain what it has been, will still be sung by the poet and treated by the novelist, and, what is of more importance, will still rule the hearts of the young, and exercise its soft influence even on those of maturer age ; will still continue the flower of life ; and he who is under its bewitching sway will still, with Antony, exclaim,

" Let Rome in Tyber melt ! and the wide arch
Of the ranged empire fall ! Here is my space,
Kingdoms are clay : our dungy earth alike
Feeds beast as man : the nobleness of life
Is, to do thus ; when such a mutual pair,

And such a twain, can do 't, in which I bind,
On pain of punishment, the world to meet ;
We stand up peerless."

DR. DAVID ASHER.

Leipsic, May 1870.

NOTE.—Since writing the above, I gather, from a review of F. Galton's work on *Hereditary Genius ; an Enquiry into its Laws and Consequences*, that the author has also referred to Darwin in support of his hypothesis. I hope this statement may suffice to save me from the imputation of plagiarism. At the same time, I am glad to find the deductions from the theory propounded by Schopenhauer, and presented in the preceding article, have been drawn by so able a hand.

ART. IX.—THE LIFE OF DR. KNOX.*

To attempt to review Dr. Lonsdale's work will be a difficult task. A biography of a most eminent English anthropologist, who passed away immediately before the foundation of the London Society, has, after the lapse of seven years, been successfully accomplished by the pupil and colleague of Dr. Knox—Dr. Lonsdale. He has done this well. Not imbued with the prejudices which still lurk in the minds of some English anthropologists and anatomical teachers against the morality of Knox, and in relation to his alleged connection with the Burke and Hare murders, he has told us, and told us well, what Knox was, what Knox thought, and what Knox did. He was, perhaps, the most simple-minded and thorough teacher of anatomy that the Edinburgh school ever produced ; and in the sentences which he published we have a more thorough idea of future anthropological science than at present exists in England. What he did was perhaps bold—it certainly was truthful. He thought of the old maxim, "Senhores ricos, e filósofos pobres, nao pôdem fazer cousas grandes, porque a estes lhes falta dinheiro, e aquelles espirito." He was, however, not too rich to be truthful, nor too poor to be

* *The Life of Robert Knox, the Anatomist. A Sketch of his Life and Writings*, by his Pupil and Colleague, Henry Lonsdale. With portraits. Macmillan and Co., London.

a philosopher. In fact, when we look at the latter years of Knox, we can apply to him the words of Swift, whose mocking antinomian denunciation of the surrounding world forcibly reminds us of Knox:—"It was bitterness that they mistook for frolic. I was miserably poor, and I thought to fight my way by my literature and my wit, so I disregarded all power and all authority." Why, he even laughed at the editors of our popular manuals of physiology, and his laughter was long afterwards approved by the unanimous vote of the Edinburgh Town Council, at the time of the famous election for the chair of physiology at that city.

Whether Knox's plan of always saying the truth without reference to the feeling or prepossessions of his auditory was absolutely the best, we do not know. It certainly was not lucrative; and it brought him enemies during his lifetime,

"Das Beste, was du wissen kannst
Darfst du den Buben doch nicht sagen."

Knox had an unfortunate habit of letting out all he thought to his students; a habit we cannot commend to all those who prefer the profits to the verities of science. And we see in his outspoken utterances the real motives which have actuated so many of our most profound anthropologists. Bunsen says, "Even the greatest men reveal, in the deepest outpourings of their hearts, their frightful despair of humanity." The sad events which marked much of Dr. Knox's life have not invalidated the triumphant words with which Dr. Lonsdale pronounces, "General consent has awarded Knox an exalted platform as an anatomist, and he was undoubtedly the first teacher of his day, but posterity will probably figure him as the chief anthropologist of his epoch, a pioneer of a philosophy that sought to recognise the true nature of man, his instincts, his passions, his psychological leanings, and social influences." The number of great English minds that owe their first scientific *impetus* to Knox's influence and personal teaching are enormous. We, as anthropologists, while we recognise the greatness of such men as Fergusson, the Goodsirs, and J. H. Bennett, must gaze at the eminent anthropological authorities whom Knox taught. Richard Owen—*αριστον ων οίδα εγω φιλοσοφων γενομενον*; Nott and Gliddon; the late lamented Dr. Hunt; Robert Druitt; Professor W. Macdonald; H. Lonsdale; Kelburne King, are instances which immediately

occur to one. Although the present writer dares not to associate himself with the before cited illustrious teachers, yet his mind goes back to the time when Knox by letter could applaud "an earnestness and love of science *for its own sake*, a sure pledge that science will not be suffered to remain stationary in your hands." He who feels towards Knox the sentiments of personal gratitude, which have led to this quotation, may be excused if at the risk of egotism, he says a little of what he personally knew of the great master, who departed to another existence on the 20th December, 1862, the very week when a few zealous anthropologists, under the command of Hunt, were meditating the foundation of the Society which has since become so influential and famous. And when we contemplate the science then and now, we feel the greatness of our losses.

To attempt to abstract the life of Knox, to attempt to excerpt from his numerous printed teachings aught that could form a categorical history of the successive facts that he brought to the notice of the English public, would be impossible in our present space. We can only point to a few of the great services he rendered science. At the period of his teaching much baleful influence was cast over English science by eight unwieldy and dull volumes, that Knox used to be fond of calling the "Bilgewater Treatises." It is probable that the doctrines and facts of Knox have produced that verdict on the ultra-teleological school which was pronounced twenty years ago, and is now almost forgotten. If this was all he did it would have been a great thing. But something more was done by him. He revolutionised altogether our study of the races of man. Many, since the time of Blumenbach, had recognised the difference between the skulls of men of various races, but none had pointed out that the inherent mental distinctions in the dress, music, manners of thought of various nations, were due to race. The only remedy for it is the extirpation of the weaker race. We fear that present events bear out entirely the predictions to which Knox gave utterance. "No one could converse with Knox without recognising the great space that man's nature filled in the schedule of the anatomist's philosophy. Race would set aside geographical position and boundaries, protocols, autocracies, and the like; it overtopped restraints of every kind, diplomatic or dynastical. Knox could not glance at a cranium for the common descriptive

anatomy without speaking of its ethnological bearings; it was the same with the external features and form of man generally and specifically. However much he might owe to study and acquirements, Knox seemed to the manner born to investigate distinctive anatomical characters; even when walking along the streets thronged with men and women, he was always on the *qui vive* for race features. He could see at a glance what ordinary men could scarcely distinguish at their leisure; if his eye was penetrative beyond most, his more gifted vision lay within an alert and discriminative mind. Previous to his time little or nothing was heard about race in the medical schools; he changed all this by his Saturday's lectures, and race became as familiar as household words to his students, through whom some of his novel ideas became disseminated far and wide, both at home and abroad. The terms 'peoples', 'nationalities', and the like, used to constitute the staple vocabulary of writers, without, however, any tangible groundwork or ideal perception of the larger truths involved. Knox, travelling like a peripatetic from one great city to another, helped to convey to the English mind a larger meaning than hitherto existed of the history of peoples; and this he accomplished by holding up a mirror that reflected not only the names and colours of humanity, but the inherent virtues and vices—call them the distinctive qualities of race." Yet, seven years after the death of Knox, we have an eminent German professor, distinguished for ability and generally profound knowledge on many subjects, writing to the *Times* to tell Englishmen that they are of the same race as the Germans! And where Max Müller has erred, many lesser men have more deeply floundered. These facts show that Knox's philosophy is not yet universally taught, and indicates the necessity that chairs of Anthropology should be founded at our Universities to teach the next generation, at least. "Men are of various races; call them species, if you will; call them permanent varieties, it matters not. The fact, the simple fact, remains just as it was; men are of different races. Now, the object of these lectures is to show that in human history race is everything." So said Knox in 1850. His description of the Celt and the Saxon will live for ever. We dare not here quote it at length. It has been often misquoted, garbled, and diluted, and the subject just now becomes so political that

we must say *non ragionam di lor, ma guarda e passa*. The principles which Knox laid down were applied by him to the Jewish race, and we must commend all Knox's generalisations respecting the Jews to the attention of the present generation of anthropologists. With Dr. Beddow's valuable little pamphlet, they form the groundwork on which we hope that some future anthropologist will base a reliable memoir on the physical, moral, and mental history of the Jews. Future generations, however, may, perhaps, not enjoy the advantage of such an artist to depict the Jew as Dr. Westmacott, whose beautiful contours of the Jew of various social types will always be of the highest anthropological value. Dr. Lonsdale, however, well points out that the Jews of the East were unknown to Dr. Knox, and he calls attention to the Jews of Constantinople, and of Syria and Rome, as types far superior to those Northern European forms with which Knox was most familiar. Our own experience, both in Morocco and Southern Spain, teaches us that Portuguese and Spanish Jews are of a far higher and more intellectual type than the English and German Jews whom Knox chiefly describes. The thorough history of the Jewish race is, indeed, a subject carefully to be worked up from a dispassionate Aryan point of view.

"Dr. R. Druitt read some passages of Knox's work to the late Lord Lyndhurst, whose 'aliens in blood, in language, and religion' speech to the House of Lords had been severely handled by the O'Connellite party and the press. In Knox's description of the Celt, the ex-Lord Chancellor found consolation to his wounded feelings. Both Lord and Lady Lyndhurst wished their estimable medical friend, Dr. Druitt, to express to Dr. Knox the delight they had in perusing the *Races of Men*, and their wish to see the work freely circulated in the best English society." It is really significant that at the time of O'Connell's efforts to obtain "Repeal", a more true appreciation of the difference between Celt and Saxon should have been shown by an English Celt, like Lord Lyndhurst, than by an Irish Celt. O'Connell, whose Celtic sympathies were so prominently developed, actually did not perceive that the Celt and the Saxon were radically different, and that even the laws of morality were diverse in the two races.

The greatest political event of the last ten years prior to the

present war, has been undoubtedly the breaking up of that synthesis which used to be the Austrian Empire. That Italians, Hungarians, Saxons, and Slaves, could form a compact autonomy was, in the eyes of Knox, an impossibility. And the opinions which in 1846 he uttered have since been corroborated on other than anthropological grounds. We now see that race governs the disposition of events in Western Europe, as well as in the South-east. Race may shortly indicate the great contrast between the dolichocephalic Swede and brachycephalic Teuton. A little caricature-map, "dressée par Hadol," now being sold at our street-corners, perhaps indicates a profounder appreciation of the anthropology of the future than popular writers on the daily press may care now to admit. "La Suède fait des bonds de panthère". The Slavonic races also are moving westwards, possibly to regain that linguistic pre-eminence which the researches of Dr. Latham have taught us they once possessed in Germany.

"If Defoe, in his wrath against the Stuarts, said that Englishmen were the mud of races, Knox hesitated not in his leisure to call them a mongrel crew." So says Dr. Lonsdale; and there is, doubtless, truth contained in Knox's somewhat uncouth expression.

The last time Dr. Knox spoke in public was on July 1st, 1862, at the meeting of the Ethnological Society. A discussion had arisen on a paper on Human Remains from Muskham and Heathery Burn, by Mr. Mackie. The skull from Muskham, since figured by Professor Huxley in 1866, presented some peculiar characters in which it was considered by Mr. Mackie to have some slight simian affinity. The present writer having spoken at great length on the subject, Dr. Knox rose, and, with a gesture of eloquence, entirely put right the whole matter, and corrected the errors into which both Mr. Mackie and myself had been led. The manner in which the great old man then spoke will never be forgotten by those who heard him. Though the chief actors of that evening—Crawfurd, Hunt, and Knox—have passed away, yet the remembrance of the last occasion on which Knox spoke will be an eternal *souvenir*. He was, by his teaching, the last almost of a great school of anatomists which has nearly passed away. It will be difficult to find in succeeding generations his equal as an anthropologist, an anatomist, or as a teacher. Those who had the pleasure of knowing him can appreciate the

feeling of loyal reverence with which Dr. Lonsdale, never blind to Knox's faults, represents his character in a light which is logically and historically accurate. Few scientific men have ever possessed a biographer so elegant or so exact.

C. CARTER BLAKE.

ART. X.—AFFINITIES OF THE OLD ITALIANS.*

ONE would have thought we had had enough of works to prove that the Latin and Greek languages are principally based upon Celtic, a dogma only equalled in absurdity by that of Jäkel, who traced the Latin language to the German. Mr. Stratton does not embrace the whole of the Celtic dialects. He goes no further than the Gaelic, and his work is chiefly composed of vocabularies. In these, a large portion of the words might well have been omitted, either because the meaning of such words is different, or because they are not etymologically connected at all; *e.g.*, *eo* and *bae*, to go, which are respectively compared with Gaelic *uidhe*, a way; *flo*, to blow, with *aile*, air; *sagino*, to make fat, with *sac*, a sack. The only use of the remaining words in the vocabularies is to prove the reverse of the theory advocated; viz., that the Gaelic, like the other Celtic dialects, is to a great extent based upon Greek and Latin. This is shown by the fact, that many words of which no etymology can be found in the Celtic languages, may, when referred to the Latin and Greek, be analysed or traced historically: thus the Gaelic *buchaille*, a cowherd, shepherd, comes from *βους* and *κόλον*; *bean* (Welsh, *benyw*), a woman, from *femina*, from an obsolete *feo*; *cathair*, a fortified city, chair, seat, from *καθεδρα*, from *κατα* and *εδρα*; *cairt*, a cart, from Lat. *carrus* (*cour*, court, from *curia*). It would be absurd to suppose that *στρουθος*, an

* *The Celtic Origin of the Greek and Latin Languages*. By Thos. Stratton. Edinburgh: Maclachlan and Stewart. 1870.

2. *Lectures introductory to a History of the Latin Language and Literature*. By John Wordsworth, M.A. Oxford: James Parker and Co. 1870.

3. *The Asiatic Affinities of the Old Italians*. By Robert Ellis, B.D. London: Trübner and Co. 1870.

ostrich, is derived from the Gaelic *struthan*. The primary meaning of the Greek word proves the reverse.

Mr. Stratton tells us it was formerly asserted the Latin was merely a dialect of the Greek, but that only a small part of the former can be referred to a Hellenic source. The author of the paper has not proved this; neither is it true, and, notwithstanding all that has been stated to the contrary, we have no hesitation in saying, that at least one-half of the words in the Latin language are derived from the Greek. This can be proved in the way already pointed out for tracing the Celtic languages to the Greek and Latin.

The object of the lectures contained in Mr. Wordsworth's pamphlet is, as its title imports, to furnish an introduction to a History of the Latin Language and Literature. The subjects of the lectures are: "The Place of Rome in Aryan Civilisation"; "The Latin Race in Italy"; and "The Elementary Age of Latin Literature". From M. Pictet's well-known work, Mr. Wordsworth gives a description of the condition of the so-called Aryan tribes, before the dispersion from their assumed primitive home in the temperate region, "lying between the Aralo-Caspian Sea and the great mountain chain to the north of the Punjaub." That some primitive race lived in this region, to whom M. Pictet's description applies, is probable; but that they were Aryans there is really no evidence. From the existence among some of the peoples descended from this primitive race of the tradition of a deluge, it has been supposed that such a catastrophe led to its early migrations. The Western tribes settled down to agricultural life, while the Eastern tribes retained their more primitive pastoral state. They had probably some knowledge of navigation on the Aralo-Caspian Sea, and in this they appear to have been guided by the Great Bear, a constellation to which they are supposed to have given its name. [It should be noted, however, that the same appellation is applied to this constellation by some of the North American tribes.] Their acquaintance with astronomy was slight, and during an eclipse of the moon they endeavoured with drums and trumpets to drive away the demon that was devouring it.

Mr. Wordsworth sums up the general characteristics of the early Aryans by saying that in them we always see "the great principles of respect for law and order joined with political and

intellectual freedom; the seeds of those powers of creation, assimilation, and expansion, which have always distinguished their posterity. The great prerogative of the Aryan race has been the culture of the human mind, the development of thought, whether directed to God, or nature, or to the concerns of mankind." How far this judgment is correct is doubtful, when we consider the high degree of culture attained by the Chaldeans and other peoples of antiquity, whose decay had already begun while the so-called Aryan peoples were yet in their infancy; unless, indeed, as French scholars are fond of repeating, the Chaldeans themselves were derived from the Aryan stock. It is rather hazardous, too, in the present state of inquiry, to affirm that "the revolutions effected by Zoroaster and Buddha are entirely Aryan in origin"; and hardly less so to assert that "by means of Aryan and Semitic agents all the great religious and philosophical movements in the world have been produced." These may have been allowable propositions at one time, but the light which has within the last few years been thrown on primitive civilisation shows that such propositions now require considerable modification.

The Milky Way has been the subject of a common myth. "It was called," says Mr. Wordsworth, "the Way of the Dead, or of the Birds (*i. e.*, human souls), and the Way of Aryaman, 'The Friend', God of the Blessed. This Aryaman is, probably, the Teutonic Irman or Irmin; and, from the northerly direction of his Way or Road, our forefathers seem to have named the great Roman North Road, the Irmin Street." The last statement is pure imagination. Neither does there appear to be any connection between the two names; *Aryaman* being a Zend compound, whereas *Irman* or *Irmin* is a German compound, and of a totally different meaning. In connection with the title "Milky Way", we may observe that the *Gosh-Yasht* of the Zend-Avesta is addressed to the Milky Way personified as a feminine genius. The word *Gosh* means "cow", referring, according to Dr. Haug, to "the universal soul by which all living beings of the good creation are animated."*

Mr. Wordsworth asserts that "it is the glory of the Western, or progressive, Aryans, that to their care, almost since its birth, the development of Christianity has been committed." This is

* *Essays on the Sacred Language, etc., of the Parsees.* 1862. P. 182.

equivalent to saying, that Christianity, as known to us, is the product of Western thought; and it is in relation to the element of Christianity which the "progressive Aryans" possess in common that Mr. Wordsworth compares them. This comparison is chiefly taken from Mr. Maine, and, therefore, we prefer to give our author's own estimate of the character of the Romans. The distinctive mental features of this people, he says, were "their strength and gravity; their self-denial; their pride in national and family tradition; their combination of religion with their political life; the order and economy of their households; and the serious recognition of all public and internal duties." Again, "the object of their culture was to fit man for a particular place in the state, and that a state where theory was carried rigidly into practice. The Fortune or Fate of Rome was really the great deity of her people, not a representative of their wills and aspirations. To carry out the destinies of the city, not to mould them, was the ideal duty of every Roman. Add to this, the inheritance of a fixed place in a family, a genus, and an order, and the duties, sacrifices, and rights, that accompanied it, and we may have an idea of the repression of individuality which was exercised upon the ancient Romans. We shall also be prepared for their regard for history, and for their success in the making and administration of law. But they had also a power of assimilation, and of using the inventions and gifts of other nations. From the earliest times they knew how to incorporate alien elements of population or culture. They were, in the words of Pliny, *omnium utilitatum rapacissimi*. In this respect, the Romans bear analogy to the Celts, who are very susceptible of foreign culture, and whose languages are 'remarkable for their power of appropriating foreign elements.'" Mr. Wordsworth accounts for the facility with which Britain, Gaul, and Spain, were Romanised, by supposing the Celts to be more nearly allied to the Latins than to other Europeans. This is hardly compatible, however, with the undoubted fact that, except in language and institutions, the French and the other Celtic peoples have much more in common with the Greeks than with the Romans.

Mr. Wordsworth suspends his judgment on the actual relation between the Celtic and the Latin languages. He says we must "allow a large element in Latin, which is foreign to Greek,

and may be akin to Celtic"; and he adds that there must at all events have been a very early contact between the two peoples.

After referring to several minor peoples of the Italian peninsula, Mr. Wordsworth turns to the Etruscans, considering first the names borne by them as a people. Of these, *Raséna*, the name by which they called themselves, "is only found in Dionysius; but we need not doubt that it was really used by the people. The conjecture of Niebuhr, that this name represents the conquering race, or mountain people from Rhaetia, has much to recommend it. They will then have been related to the subject races, just as the Magyars to the Hungarians, and the Normans to the Saxons. Dr. Donaldson supports this view by an explanation of the name *Ras* as = *Ros*, 'the runners', and refers to the similar aristocratic name 'Celeres' at Rome. He believes the *Ras* or *Raséna* to have been a Scandinavian or Low German people, and on this hypothesis explains various difficulties in the Etruscan language. He would also derive the name *Et-rur-ia*, or *Et-rus-ia*, from the same root."

Assuming that the Etruscans were of Asiatic origin—an opinion which is said to be supported by the character of their art remains—we think a much better etymology might be found for the name *Raséna*. Bochart mentions a place named *Παισινα*. *Παισινα* was the name of two cities of Mesopotamia, and *Resen* was the appellation of a very ancient city between Nineveh and Calach in Assyria. For our part, however, we think it more probable that *Raséna* is a corruption of *Tyrsene* for *Tyrrhene*. It must, however, be admitted that the Etrusci called themselves *Raséna*, and that they were only called by others Etrusci and Tyrrheni. Mr. Wordsworth's own opinion as to the race-affinity of the Etruscans is that "the most important part of them were of the Aryan race, and probably of the Pelasgian stock, with more of Asiatic qualities than the Greeks or Latins had." How far this conclusion agrees with the latest anthropological researches, may be seen by reference to the important memoir of Professor G. Nicolucci, who inclines to refer the Etruscans to a Semitic source.*

Mr. Wordsworth refers, in this connection, to certain local names of apparently Celtic origin; among others, those of the *Umbrians* and *Ambrones*, and of the river *Umbro*, and to the

* Conf. Journ. of Anth., No. 1, p. 79.

fact that the Umbrians are represented by ancient authors as the aborigines of Italy, and by some of them as of Gaulish origin, all of which would lead us to conclude the settlement of a Celtic race in Umbria.

The principal object of the work on the *Asiatic Affinities of the Old Italians* is to prove that the Etruscan language is derived from the Armenian, which latter language is supposed to have been carried by the Thracians from the Caspian to the Alps and the Tyrrhenian Sea. The work is ingenious, but not altogether satisfactory. There is nothing impossible in the supposition that there was some connection between the Etruscans and the Armenians; but we think that affinities with the former might, if necessary, have been found nearer home. The index of Etruscan words is considerably fuller than the vocabularies of Donaldson and Newman, although some words they contain have been omitted, whilst others might have been added from Fabretti, which are not found in any of these vocabularies. A critical examination of the words given by Fabretti leads us to think that many of them are derived from a Greek source, and that others are connected with Teutonic, Celtic, and Phœnician. Mr. Ellis's work is almost wholly etymological, and we must say we do not think much of his critical power in this respect. His comparison of the Etruscan numerals is very faulty. These he connects with the Aryan and Caucasian numerals, whereas they are much more nearly allied to the Semitic, with which Mr. Ellis does not compare them. Take, for instance, the Etruscan *zal* (three). This is related to the Hebrew *sel-sah* (three), although, probably, a second Etruscan form, *thr-*, is connected with the Zend *thraio* (Sansk., *traya*). So also the Etruscan *huth* (four), which may, as Mr. Ellis supposes, be somehow connected with the Georgian *khuthi* (five), is evidently related to Semitic forms. Thus, the Amharic has *arrut* (four), in the Semien dialect, *harat*, which in Kaffa becomes *haudda*. The queried second Etruscan form of this numeral, *kar-*, confirms this derivation. Again, the Etruscan *ki* or *kiem* (five), may be connected with the Hebrew *khamisan* (five), in Syriac *khamso*; and the Etruscan *sa*, *sas* (six), would seem to be related to the Hebrew *sisah*, in Tuarik *sesot*. This numeral, as well as the Etruscan *be(m)ph* (seven) had, doubtless, Aryan analogues, but it is more nearly connected with the Semitic. Conf. the Hebrew

sibeah (seven), the Syriac *sabao*, the Tuarik *seba*. We have not space to follow further Mr. Ellis's etymological analysis of the Etruscan language. In conclusion, however, we would refer to certain philological reasons which he gives in order to prove that at one time the people now found in the Caucasus spread throughout the whole of Southern Europe. Our author says: "The name of the *Orobii*, who occupied the mountains of Como, and possessed *Berg-omum* (which is like *Perg-amus*, and may contain a termination like the Tuschi *-om*, and that of the Lycian *ὄλ-αμος*); of the river *Orobis*, now the *Orb* in Languedoc; of the river *Orba*, in the Ligurian Apennines; of the Pæonian Mount *Orbelus*; and of the Georgian *Orbelian* family;—all these names may be compared with three given by Ptolemy: *Orbanassa* in Pisidia, and *Orbisene* and *Orbalissene* in Armenia Minor, where *-sene* would be the Armenian termination *śén*, found in *mezaśén*, 'great', and *śikaśén*, 'red', Cf., *Tyr-senus* and *Por-sena*. It signifies also 'town', and is Georgian as well as Armenian. *Orbi* means 'eagle' in Georgian; and *-ali* and *-eli*, which may appear in *Orb-elus* and *Orb-alissene*, are common Georgian terminations: e.g., *dab-ali*, 'humilis', from *dab-a*, 'pagus'; *Guri-eli*, 'belonging to the country of Guria.' Mount *Orbelus* would probably = *Adlersberg*, but the rivers *Orba* and *Orobis* would rather mean 'swift', like as the Etruscan *aracus*, 'hawk', is the Armenian *arag*, 'swift'. Cf. *Araxes*. There is an *Arbel-horn* in the Bernese Alps." Now, in answer to this, we may observe: 1, that the proper name *Tyrsenus* is simply a poetical form of *Τυρρηνος*, which is etymologically the same word as *Tusci*, *Thusci*, *Etruria*, *Heturia*; 2, the termination in *Gurieli* is most probably the Turkish *ül* or *èyl*, country; 3, the Etruscan *aracus* is, without doubt, the same word as the Greek *ἰεραξ*, *akos*; 4, the *Orb* or *Orbis* in Languedoc, and the *Orba* in Liguria, may be compared with the *Orb* in Franconia; the *Orbe* in Switzerland; *Arva*, two rivers of North Hungary; *Arve*, name of three rivers of Spain, tributary to the Ebro; the *Aar* in Switzerland; and the *Aire* in England. *Yverdun* in Switzerland is near the mouth of the *Orbe*. The fact is all these river-names have been corrupted down from *υδωρ*, water, the medial letters, *b* and *v*, being simply digammas.

Of the three works classed together in this notice, that of Mr. Wordsworth is by far the best, and it has a positive value which neither of the others possesses. The first part of the

third lecture, which treats of the Latin alphabet, and the various changes which its letters have undergone, is good, and will be of great service to the students of the Latin language and literature. The sketch of the Elementary Age of Latin Literature is of great interest, particularly that portion of it relating to the *Annales* and *Fasti*, and to the Code of the XII Tables.

R. S. C.

ART. XI.—MATTER AND SPIRIT.*

It requires considerable courage in the present day, when physical science has almost entirely superseded philosophy in its influence over the minds of the leaders of thought, to write in support of a system which denies the very existence of such a substance as matter. This is, however, what is done from time to time; and Mr. Doubleday has now entered the controversial arena in support of Bishop Berkeley's famous theory. If he can convince any of his readers of its truth, he will, indeed, have achieved a great triumph. In his preface, Mr. Doubleday says: "No one can be more entirely aware than is the author of these pages of the utter feeling of blank incredulity with which the theory of Bishop Berkeley, when first stated, is invariably received, even by persons not unaccustomed to metaphysical speculations. So directly opposed is it to all ordinary notions, that there are intellects to which no clearness of statement can render it even comprehensible."

We have no intention of entering fully into the argument by which this incredulity is sought to be removed; but we will show what is the ultimate conclusion of the Berkeleyian philosophy, and the general reasoning by which it is supported, pointing out where we think its weakness lies. The ultimate conclusion of this philosophy may be stated in Mr. Doubleday's own words. "It destroys and renders impossible all atheistical notions or doctrines, inasmuch as it proves that the Creator is,

* *Matter for Materialists: a Series of Letters in Vindication and Extension of the Principles regarding the Nature of Existence of the Right Rev. Dr. Berkeley.* By Thomas Doubleday. London: Longmans, Green, and Co. 1870.

immediately or ultimately, the author of all our sensations, impressions, and perceptions, of every kind and description whatsoever." The real aim of Berkeley was, undoubtedly, to prove the existence of God, by showing that such existence is absolutely necessary to the explanation of mental phenomena. It is clear that, before the latter point can be established, the non-existence of "matter" must be proved, and this, therefore, is the essential part of the theory. "It will be found, on investigation," says our author, "that the results of all phenomena are purely mental, and reside in the effects they produce upon the mind which perceives them." From this it is inferred that, as the only use of matter could be to act as the medium of conveying impressions to the mind, which impressions may "be conveyed to the mind either by the immediate act of God, or mediately, by the ministration of lower orders of immaterial beings, matter becomes a superfluity, and being so, its existence becomes, in the highest degree, improbable." This reasoning is curiously hypothetical, and requires the assumption to begin with, that life and mind existed on the earth (supposing it to exist) from the very beginning of its history. The real argument in favour of Berkeley's system is, however, more direct. It is thus stated by Mr. Doubleday: "It must be allowed on all hands, by materialist and immaterialist, that we have bodily impressions, visible and tangible. If, then, we be absolutely driven to abandon the notions that these impressions have their source in material substances, we must, by the same necessity, be forced to conclude that they are the results of immaterial agency of some kind."

The proof of the truth of the immaterial hypothesis is, therefore, indirect, and the only way in which it can be established is by showing "that the opposite, or material theory, necessarily involves so many plain contradictions and manifest absurdities" that it cannot be true. This is sought to be proved by reference to the ideas of space, time, and motion, which are declared to be inseparably connected, not only with each other, but also with "all our ideas of visible and tangible existences," and to exist only in our own minds, being given to us as instruments whereby we may receive the ideas of these existences; and then by showing that the so-called qualities of matter are only affections of the mind, or inferences from such affections. This conclusion

would seem to follow from the fact that material substance would require for its own existence, that of space, which is supposed to be only an idea found in the mind itself. In subsequent chapters, Mr. Doubleday examines the theory of atoms, endeavouring to prove that neither these nor the so-called organic germs have any real existence, and unfavourably criticises the atomic and undulatory theories of light.

Most of the reasoning against the existence of matter is founded on certain supposed difficulties connected with the idea of space. These difficulties are, however, created by the immaterialists themselves, and are all founded on the impossibility of apprehending space in the abstract. From this it is assumed that space does not exist, and, therefore, that there is no such state as motion, and no such substance as the matter supposed to be moved. All this is pure assumption, and a line of reasoning the reverse of that used may be employed to establish the existence of everything that is excluded. Thus Mr. Doubleday says: All objects having shape, tangibility, colour, smell, or motion, must exist in space. The idea of space, therefore, is requisite for our perception of the whole of them," and is inseparably connected with all our ideas of such objects. Among these are included our own bodies and limbs, the idea of which we cannot dismiss. "But the impression of our own body, as an existence, requires that of space. Hence we cannot dismiss that of space, which that of our own bodily existence requires to be present." The idea of space, therefore, is necessary to an embodied being, and although purely relative at first, it may be extended in thought so as to become absolute, that is, unlimited. As against those who believe in the existence of an Absolute Being, the formation of such an idea, indefinite though it must necessarily be, is in reality a proof of the actual existence of infinite space. Mr. Doubleday may, however, object—"It is quite possible, by a strong effort of mind, to conceive the whole material universe, ourselves included, to be annihilated and made to vanish. In that case what would remain? A universal nothing, destitute of qualities of any kind. To say that space would still remain is a gratuitous assertion." To do this would, indeed, require a strong effort of mind, since it would suppose the annihilation of Deity himself, and it would be much easier to form the idea of infinite space. This idea may be, and no doubt is,

as necessary to the divine mind as that of relative space is to the action of the human mind in relation to external phenomena, and contrary to the assumption made by immaterialists, analogy requires us to believe that space, not abstract, but absolute, is essential to the very existence of the Deity himself. Mr. Doubleday's reasoning rests, in reality, chiefly on a confusion between "infinite" and "abstract" ideas, which have nothing in common, the latter being simply a metaphysical term, while the former expresses an endless series of possible phenomenal existences.

It might be thought that a simple statement of the conditions of the inquiry would be a sufficient answer to the arguments of those who deny the existence of matter. The notion that there is no real material basis for such a series of phenomena as that embraced in the development of the grown man from the foetus, or in the evolution of what is usually understood by "civilisation," even although its material effects "resolve themselves into food and shelter," and that the phenomena are the result of certain impressions on the mind, made by the Deity, or by certain immaterial beings, is simply absurd. The real value, however, of such a book as Mr. Doubleday's, is to act as an antidote to the views of the opposite school of thought, which teaches that the only real existence is "matter." The arguments of the materialists are just as inconclusive as those of their opponents, and the reasoning by which Mr. Doubleday seeks to prove the necessary existence of mind may be read with considerable profit, when due allowance is made for the extreme opinions he himself holds.

There is one ground of reconciliation between immaterialists and the materialists—that which resolves the "substance" of the latter into force, this force being simply the spiritual being of the former. The objective world is equally non-real in both cases, and hence the objections which can be urged against the existence merely of mind are equally applicable to the notion of the reality only of force. In the resolution of all matter into "force," there is as great an assumption as in the resolution of all objective phenomena into mere mental impressions. Mr. Herbert Spencer has avoided this mistake, and he seeks to establish that "matter" and "spirit" are only different names for one and the same substance, the real nature of which we can never know. Mr. Spencer's theory, however, requires the exis-

tence of "force" as well as of this substance, and we may be tempted to see in the former simply the activity throughout the material substance of a spiritual, or shall we say, a "vitalising" principle which inheres in it. In the existence of such a vitalised substance throughout the universe we have the only possible reconciliation of the material and spiritual hypotheses, and by it alone can the evolution of such a being as man be explained.

ART. XII.—THE MOABITE STONE.*

Perhaps some apology might be almost needed for introducing any account of the Moabite Stone into this Journal, but before long it will, we think, be seen that this extraordinary discovery has an anthropological bearing and interest, anthropology itself being a sort of central science, with which most departments of human knowledge have more or less connection.

This inscribed stone was first discovered by Mr. F. Klein, of the Church Missionary Society, in the summer of 1868. He had made a journey from es-Salt to Kerak, over a country very rarely visited by Europeans. He arrived at Diban on the 19th of August, and was told of the stone by Sheik Zattan, Sheik of the Beni Sachr, who said it was near. It is three feet five inches high, rounded at the top and bottom, and one foot nine inches in width and thickness. The stone is a piece of black basalt, and has an inscription upon it in ancient characters.

The Land of Moab, so called from Moab, the son of Lot, lies on the east and south of the Dead Sea, and is now called Kerak. It is at present wild, and inhabited mostly by wandering Arabs.

Mr. Klein informed Dr. Petermann, of Berlin, of his discovery, and they strove to secure the stone for the Berlin Museum, through the Prussian consul at Jerusalem. Captain Warren, of the Palestine Exploring Society, was informed of the exist-

* *The Moabite Stone: a Fac-simile of the Original Inscription, with an English Translation, and a Historical and Critical Commentary.* By Christian D. Ginsburg, LL.D. London: Longmans and Co. 1870. 4to.

ence of this inscribed stone and perceived its importance, but appears not to have taken any steps to obtain it, since he understood the Prussians were moving in the matter. M. Clermont-Ganneau, French consul at Jerusalem, was not deterred by such knowledge, and made an offer of twenty medshidjes, about £375, for the stone, to the Arabs. As Dr. Ginsburg feelingly says, "we, as good men of business," can understand that the Arabs would now make the most of it. They disputed among themselves its ownership, although it seems to have been used as a charm by the tribe; and at length they heated the stone and then threw cold water upon it to split it into pieces, so that each family might have a fragment to place in its granary, as a charm to bless their crops. Dr. Ginsburg attributes the cause of this frightful fracture of the stone to the indiscreet interference of the French consul, and his desire to secure it, instead of allowing it to fall into the hands of the Prussians. Nevertheless, the author is not at all inclined to detract from the ability and learning displayed by M. Ganneau in decyphering the inscription. He also says that M. Ganneau was the first to recognise the immense importance of the monument, yet he has not the candour to ever mention the name of Mr. Klein, its discoverer. This jealousy of Prussian influence, by a Frenchman, may be well understood in December, 1870.

Although the stone was broken up and its fragments distributed amongst the Arabs, most of these have been recovered, and Dr. Ginsburg is able to give a fac-simile of the whole stone, *reduced to one third*, as a frontispiece to his memoir. This restoration is produced from various materials, beginning with an injured impression taken in paper when the stone was complete, which was taken by a young Arab, Yaqaob Caravacea, who was sent to Dibon with two mounted horsemen by Ganneau; and another taken from the two large fragments into which the stone was broken, taken by the Adwan of Captain Warren, together with different fragments, or impressions, from them, rubbings, photographs, etc. Dr. Ginsburg tells us that the stone is now in the possession of M. Ganneau, at Jerusalem, and that of the Palestine Exploration Society. Speaking of M. Ganneau's investigations respecting the inscription, Dr. Ginsburg is able to say that "this young French *savant* has performed his task in a most scholarly, careful, and conscientious manner, and that his text can be relied upon."

The Moabites were of the same race and speech as the Hebrews, but not of the same religion. Their religion was a kind of nature worship. Their national deity was Chemosh, or as Dr. Inman in his learned "Ancient Faiths" prefers, Camus. This god Chemosh is mentioned in the Second Book of Kings, where Omri, Mesha, and the Moabites, are all alluded to. Their language was a dialect allied to the Phœnician and to the Hebrew, sometimes resembling the one, sometimes the other. The characters in which the inscription upon the Moabite Stone is written are those called "Phœnician," from the supposed fact that the Phœnicians invented them.

It is probably desirable that we should give Dr. Ginsburg's translation of the inscription upon this ancient stone. It is as follows :—

"I, Mesha, am son of Chemoshgad, King of Moab, the Dibonite. My father reigned over Moab thirty years, and I reigned after my father. And I erected this stone to Chemosh at Kahara [a stone of] [Sa]lvation, for he saved me from all despoilers, and let me see my desire upon all my enemies; and Om[r]i, King of Israel, who oppressed Moab many days, for Chemosh was angry with his [la]nd. His son succeeded him, and he also said, I will oppress Moab. In my days he said, [Let us go] and I will see my desire on him and his house, and Israel said, I shall destroy it for ever. Now Omri took the land Medeba and occupied it, [he and his son and his son's] son, forty years. And Chemosh [had mercy] on it in my days, and I built Baal Meon, and made therein the ditch, and I [built] Kirjathaim. For the men of Gad dwelled in the land [Ataro]th from of old, and the K[ing of I]srael fortified A[t]jaro[h], and I assaulted the wall and captured it, and killed all the wa[rriors of] the wall, for the well-pleasing of Chemosh and Moab; and I removed from it all the spoil, and [offered] it before Chemosh in Kirjath; and I placed therein the men of Siran, and the me[n of Zereth] Shachar. And Chemosh said to me, Go, take Nebo against Israel. [And I] went in the night, and I fought against it from the break of dawn till noon, and I took it, and slew in all seven thousand [men, but I did not kill the women and maidens], for [I] devoted [them] to Ashtar-Chemosh; and I took from it [the ves]sels of Jehovah and cast them down before Chemosh. And the King of Israel fortif[ied] Jahaz, and occu-

pied it, when he made war against me; and Chemosh drove him out before [me, and] I took from Moab two hundred men, all chiefs, and fought against Jahaz, and took it, in addition to Dibon. I built Karcha, the wall of the forest, and the wall of the city, and I built the gates thereof, and I built the towers thereof, and I built the palace, and I made the prisons for the men of with[in the] wall. And there was no cistern within the wall in Karcha, and I said to all the people, 'Make for yourselves every man a cistern in his house.' And I dug the ditch for Karcha with the [chosen] men of [I]srael. I built Aroer, and I made the road across the Arnon; I built Beth-Bamoth, for it was destroyed; I built Beza, for it was cu[t down] by the fifty m[en] of Dibon, for all Dibon was now loyal; and I sav[ed] [from my enemies] Bikran, which I added to my land; and I bui[lt] [Beth-Gamul], and Beth-Diblathaim, and Beth-Baal-Meon; and I placed there the Mo[abites] [to take possession of] the land. And Horonaim dwelt therein And Chemosh said to me, 'Go down, make war against Horonaim, and ta[ke] it' Chemosh in my days year
and I"

Hence it appears that it "records the wars of Mesha, King of Moab, with Omri, King of Israel, and his successors. Having given his own name and that of his father as well as the duration of his paternal reign, Mesha states that he erected this monument to his national god, Chemosh, as a token of gratitude for deliverance from the forty years' oppression by Omri, King of Israel, and his successors." The second part celebrates the public works undertaken by Mesha after his deliverance from his Jewish oppressors. The third part records his successful wars against the Horonajim, or the Edomites, which he undertook by the express command of Chemosh. Omri is the King of Israel mentioned in the Bible (1 Kings xvi, 16-28, etc.) The resubjugation of Moab by Omri took place in the days of Mesha (*circa* B.C. 924). The history of the events which immediately preceded the erection of this stone is given in 2 Kings iii, 4-27. Mesha, King of Moab, who paid a tribute to the king of Israel, revolted. When Jehoram succeeded to the throne of Israel he secured the help of Jehoshaphat, King of Judah, and of the King of Edom, and marched against Mesha. On their approach to Moab the armies were in danger of perishing for want of

water. Elisha, the prophet, was found to be with the host, and the three kings went to him, entreated him to inquire of Jehovah, who promised a plentiful supply of water and their success. When the abundance of water arrived, the sun shining upon it made it look red to the Moabites, who took it for blood, and rushed forward thinking their opponents were slain, when they themselves were routed and slaughtered. Mesha made a vigorous attempt with seven hundred men to break through the invading army, and when beaten back he offered up his eldest son, the heir to the throne, as a burnt offering to Chemosh, upon the wall of the city of Kirharraseth, in the sight of the invaders. "This sacrifice had the desired effect, for the invaders were severely chastised, or, as it is euphemistically expressed, 'and there was great indignation against Israel, and they departed from him and returned to their own land.'" However difficult it may be to explain this expression, it appears to be without doubt that it was this deliverance of his land from Omri and his successors that induced Mesha to set up this inscribed memorial stone at Dibon, the fortified capital of the King of Moab, where it has just been discovered, almost three thousand years afterwards. Although there are some difficulties in reconciling the history given in the 2 Kings with the inscription, it must not be forgotten that these documents describe the same events from opposite sides—the one is the account of the Israelite invaders and conquerors, and the other that of the subdued and afterwards restored Moabites. There seems to be no room whatever to question that both documents refer to the same period, the same persons, and the same occurrences.

This lapidary monument is the oldest epigraphic document in this species of writing. Its age is about 920—30 B.C. The time of Homer and Hesiod is stated to be about B.C. 850—776. The Moabite Stone is three centuries older than the sarcophagus of Eshmunazar (B.C. *circa* 600), hitherto considered the most ancient inscription of any considerable length. We know that Chemosh, mentioned upon the stone, was the national god of the Moabites, for Solomon had Moabite wives, who had sufficient influence over him as to induce him to erect a temple to Chemosh upon the mount of Olives, at Jerusalem.

There are some points which will be perceived to be of anthropological interest in Dr. Ginsburg's lucid account of the Moabite

Stone. Into the light thrown by this inscription upon the different more recondite questions relating to the Hebrew writings, we are not able to enter here. It is the opinion of Dr. Ginsburg that the importance of it to the language of the Old Testament cannot be overrated. Its palæographical importance is highly worthy of notice. The author says, "in this respect this triumphal pillar is perfectly peerless, in as much as we here obtain an alphabet which is more than a century and a half older than that in any other epigraphic document containing the same species of writing; and it is three centuries older than the sarcophagus of Eshmunazar, which has hitherto been considered the most ancient inscription of any considerable length. The characters of the Moabite stone are "Phœnician," as they are generally called, from the supposed fact that the Phœnicians invented them, or that they were peculiar to them."

It is Herodotus who relates that the Phœnicians who came with Cadmus introduced a knowledge of letters among the Greeks. Pliny declares that the Cadmean characters were only sixteen in number, and that others were added by Palamones and Simonides. Hence Dr. Donaldson and others have concluded "that the original Semitic alphabet contained only sixteen letters." The Moabite Stone proves, however, that the Semitic alphabet, at the period at which the inscription was engraved, really B.C. 903 to 1000, had twenty-two letters, which were altogether taken over by the Greeks. What is still more remarkable is, that the archaic Greek characters, in the earliest known inscriptions, are mostly similar to, if not identical with, those upon the Moabite Stone.

Dr. Ginsburg renders his work as complete as possible by including at the end the different versions of the inscription, published by six different scholars of different countries.

CONTEMPORARY LITERATURE.

THE MODERN THINKER: An Organ for the most advanced Speculations in Philosophy, Science, Sociology, and Religion. New York: D. Goodman, Editor and Publisher. 1870.

THE following extract from the introductory "Egotisms" of the editor will show the position intended to be occupied by this new American periodical. "The projector of *The Modern Thinker* is a Positivist, of the school of Auguste Comte. He does not, however, unqualifiedly accept all the speculations of that great philosopher. It is his desire to be liberal, and to open the pages of this publication to the representatives of all the advanced schools of thought, especially to the adherents of Herbert Spencer and John Stuart Mill." The questions treated of in the present number are full of interest, and they are discussed with ability, and with praiseworthy absence of dogmatism. Amongst the best articles are "The Last Word about Jesus," by John Fiske; "The Positivist Problem," by Fred. Harrison; "The Future of Marriage," by D. G. Croly; "Scientific Propagation," by John H. Noyes; "and Comte's Insanity," by Prof. André Poëy. As most of the subjects discussed are speculative, there are necessarily many points in which we disagree with these writers. We trust, however, that the enterprising editor will meet with sufficient encouragement to lead to the issue of a second number. We should be glad, however, to see the printing in colours on coloured paper discontinued. We do not think such a course would be inconsistent with positivism.

THE PEOPLES OF TRANSYLVANIA: By Richard Stephen Charnock, Ph.D., etc. London: Trübner and Co. 1870.

THIS pamphlet, which embodies a paper read before the Anthropological Society of London, on the 4th May, 1869, contains a large collection of facts relating to the various peoples who make up the inhabitants of Transylvania. The account of the German settlers in that country will now be read with much interest. The details given as to the gipsies of Transylvania are good. Like the gipsies of most other European countries, they excel chiefly in music and smith-work. The list of works of reference supplied by Dr. Charnock is of great value.

AN ADDRESS DELIVERED IN THE DEPARTMENT OF ETHNOLOGY AND ANTHROPOLOGY. (British Association for the Advancement of Science. 1870): By John Evans, F.R.S., F.S.A.

LITTLE need be said to recommend this address, which, coming from the pen of so accomplished an anthropologist as Mr. Evans, is sure to be well considered. The number of topics touched upon is necessarily great, and this may perhaps account for the somewhat inadequate treatment which some of them have received. Such are the subjects of morals and religion, both of which are capable of a strictly scientific

treatment. When this is applied to them great light will be thrown on the development of the human mind. The law of "evolution" is just as apparent in the phenomena of the moral nature as in the more purely intellectual phenomena to which Mr. Evans has almost exclusively confined his attention.

OLD SHOWERS: By Carribber. London: Kerby and Son. 1870.

THIS little book, which is intended chiefly for young persons, gives an account and explanation of the falls of insects, fishes, and lizards; soot, sand, and ashes; red rain and snow; meteoric stones; and various other bodies. The idea of compiling such a work is ingenious, and the strange facts mentioned are so well treated, that if published in a more detailed form the work would no doubt be well received by the reading public.

ANCIENT MANORIAL CUSTOMS, TENURES, ETC., OF THE COUNTY OF ESSEX: By Richard Stephen Charnock, Ph.D., etc. London: Longmans, Green, and Co. 1870.

THIS pamphlet displays the painstaking antiquarian research which is so characteristic of the works which proceed from Dr. Charnock's pen. Some of the manorial customs of Essex, as of other English counties, are so absurd, that we are inclined to believe that they were instituted in the "jocular" spirit to which Dr. Charnock seems inclined to refer the *Flitch of Bacon* custom of Little Dunmow. Our author refers to the information collected by the late Dr. Wm. Bell as to the ancient superstitious use of the flitch. This is very curious. The flitch here had some relation to "fecundity," and it seems to have been offered by the Prussians to their god Percunnos down to a comparatively recent period. Doubtless the Dunmow custom had reference to the idea of fruitfulness in the married state, although it ultimately received another application.

THE PICTURE GALLERY OF THE NATIONS: For the Young. London: The Religious Tract Society.

THE handsomely illustrated work thus entitled is a sign of the times. The popular interest in the inhabitants of other lands is gradually increasing, and such works as the present one, although having little scientific pretension, aid in developing the newly-acquired anthropological taste. On the whole, the engravings give a very good idea of the features of the peoples delineated. We cannot speak so well of the text. Take, for instance, the following reference to the Irish: "They are a strong and active people, are fair and healthy in complexion, and, when young, commonly have *flaxen hair* and *dark blue eyes*." The italics are our own.

HISTORY OF THE DOCTRINE OF THE DEITY OF JESUS CHRIST: Translated from the French of Albert Réville. London: Williams and Norgate. 1870.

WE commend this small work to the perusal of all those who take an

interest in the development of Christian dogma. It contains a masterly summary of the various phases through which the doctrine of the Deity of Jesus Christ has passed, from the rise of Christianity to the present period, and it may be read with profit by both those who accept and those who reject its general conclusions.

THE PROPENSITORIAL ZODIAC, OR, PSYCHONEUROLOGY OF THE MENTAL FACULTIES, AS GOVERNED AND DEVELOPED BY THE ANIMAL NATURE; SHOWN BY A DEMONSTRATIVE CHART ENTITLED AN ANTHROPOLOGICAL CATHOLICON: By Robert T. Stothard. London: James Burns. 1870.

THE system of psychoneurology which Mr. Stothard seeks to establish, and which he explains by reference to a number of drawings of the four organs of special sense: the eye, the nose, the mouth, and the ear, is founded on the propensitorial zodiac. This ingenious "calendar of the component parts of man" is intended to be "demonstrative of the effect of the track of the sun through the twelve months, establishing certain propensities during the period of parturition before birth and after, open to mischief by the indiscriminate system of scholastic discipline interfering prematurely with the mental faculties, they being the only basis for man's internal activity from the memory of the brain." We recommend this chart to the attention of the Educational Board.

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SCIENTIFIC SOCIETIES.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The 19th meeting of this Association was held at Troy, New York, August 17-24th, 1870. The chief papers on anthropological subjects read were "On the Distribution of the Native Tribes of Alaska and the adjacent Territory," by W. H. Dall, and "On the Botocudos of Brazil," by Charles F. Hartt. Mr. Dall, after criticising unfavourably the usual division of the natives of Alaska, said that they may be divided into two great groups, "those which belong to the aboriginal American stock, whom we are accustomed to designate as Indians; and those scattered along our northern coasts, from Greenland to Behring's Strait, and for whom we have as yet no general term, but who have been called Eskimo Aleutians; and on the Asiatic side of the Straits, Tuski and Sedentary Chuckchees." These Mr. Dall proposes to call Orarians (*ora*, a shore), and he distinguishes them (1) by their language; (2) by their distribution, always on islands, or confined to the sea-coasts; (3) by their habits, more maritime and adventurous than those of the Indians; (4) by their physical characteristics. These are a light fresh yellow complexion, fine colour and broad build, and especially the largely developed coronal ridge, and an obliquity of the arch of the zygoma. These cranial peculiarities are common to all Orarian skulls, and form a ready means of distinguishing them, being only shared by the northern mound builders, who were perhaps their ancestors. The "Indians" who dwell near these people call them "Uskeemé," or sorcerers. The Orarians are divided into three lesser groups, the Eskimo, the Aleutians, and the Tuski; and these are subdivided into many tribes, which were particularised in Mr. Dall's paper. The Tuski differ from the Eskimo, with whom they are at enmity, in not wearing *labrets*, and in many particulars of their mode of life. They extend along the shores of the country between Anadys Gulf, and Kuluchinskaia Bay, and Behring Strait. Mr. Dall laments the almost utter loss of the traditions and ancient religious rites of certain of these tribes, especially amongst the Eskimo and the Aleutians. These rites have been totally suppressed by the Russian authorities, and the tradition of them remains only with a few old men. Mr. Dall gave a short account of some researches into the

structure of the Eskimo languages, showing that the radical words of the different dialects, from Greenland to Behring Straits, are essentially the same, while many of the adjectives, verbs, and prepositional terminations, differ in tribes which are closely adjacent. Mr. Dall was not able to group the "Indians" so well, as our knowledge of them is far from complete, but he enumerated fourteen or fifteen distinct tribes. The vocabularies he has compiled show the relations existing between the several dialects. Shamanism is common to both Indians and Eskimo. The system of *totems*, according to Mr. Ross, exists in some of the Indian tribes, but is falling into disuse. In some tribes there are, or were, four *totems*, the crow, the wolf, the whale, and the eagle, in others only three. Among the Eskimo there is nothing of the kind.—"On the Botocudos of Brazil," Mr. Hartt said that the Botocudos are of middling height, stout in body, but thin and generally slight in the extremities. They have the colour of light mulattoes, eyes generally dark, rarely blue, cheek-bones not very prominent. The custom of perforating the ear and lip is dying out. The Botocudos go naked, but sometimes paint the face and body with annatto, and a black vegetable dye. They use long bows and arrows, and formerly had cutting instruments of stone. They have only one wife, who is treated very brutally. They believe in bad spirits, great and small, but they appear to have no idea of a good God: The dead are buried in or near the wigwam, and a fire is sometimes made over the grave to keep off bad spirits. They are strongly suspected of cannibalism. The Botocudos have been almost exterminated by Brazilian cruelty and rum drinking. They are now confined to the forest between Rio Doce and the Rio Pardo. They resist civilisation and Christianity, and are sunk in the lowest barbarism.

LITERARY AND PHILOSOPHICAL SOCIETY, MANCHESTER.—At the meeting of this Society, held October 4th, Mr. Boyd Dawkins gave an account of the recent work done at Victoria Cave, near Settle. Among the remains connected with man in the lower deposit, were found flint flakes and a bone harpoon, resembling that used by the natives of Nootka Sound. The comparatively late date of the upper stratum was confirmed by other remains. The presence of several spurs of the cock, showed that the domestic fowl was used for human food. The most striking object discovered was an enamelled sigmoid fibula of bronze.

THE ETHNOLOGICAL SOCIETY OF LONDON.—At the meeting of this society, held November 8th, a carved wooden implement, found beneath twenty-seven feet of guano, in the Island of South Guanape, was exhibited and described by Mr. Josiah Harris. Colonel A. Lane Fox exhibited a rudely worked stone implement from Borneo, being the first which has reached this country from that locality. A paper was then read "On the Kimmerian and Atlantean Races," by Mr. Hector McLean. The author described the Atlanteans as a dark race, forming a considerable ingredient in the population of Spain, southern and central France, South Wales, and the south and west of Ireland

and Scotland ; whilst the Kimmerians were a fair people, often of tall stature, with gaunt features, ruddy complexion, grey eyes, and red or yellow hair. These Kimmerians occupied the British Isles, and mixed with the Atlanteans previously to the arrival of the Scandinavians and Teutons. By means of the names of places, the author traced them in their migrations westwards, from their original home between the Don and the Volga. The author concluded that the present population of England is more truly British, or Kimmerian, than the Welsh, and that our language is not the direct descendant of the language of the Saxon conquerors, but the descendant of both that of the conquerors and a kindred native language.—November 22nd. A paper by Dr. Bleek “On the Concord, the Origin of Pronouns, and the Formation of Genders or Classes of Nouns,” was read. The author stated that the classes or genders in the sex-denoting languages originally depended, not upon the meaning of the nouns, but upon their representative particles, which, in these languages, were primarily at the end of the nouns. These genders were, from an originally large number, gradually reduced, until in the Aryan languages they were mainly two—one with the representative element, *U*, which is called the *masculine* class, and the other with the representative element, *A T I*, which is named the *feminine* class. The *neuter* appears to be a later development, into which, however, an original common plural gender, with the termination, *A N I*, may have been incorporated. To these endings the case-terminations were affixed, and through pressure of the latter the original marks of gender have frequently been obscured. The concord was at first due to the presence of these representative elements of the nouns in their pronominal character.—13th December. Mr. Grove, Q.C., exhibited twelve skulls from the crypt of Rothwell Church, Northamptonshire. Professor Busk described the skulls as being smaller than those of the existing race, and many exhibit an extreme lowness of forehead. Some of them resemble Professor Huxley’s “river-bed” type. Sir John Lubbock, Bart., read a paper “On Stone Implements from Africa,” in which he described certain implements of the spear-head type, from the Cape of Good Hope, and some small polished celts brought by Mr. Winwood Reade from near Accra, on the Gold Coast. Mr. C. Spence Bate, F.R.S., read his second report “On the present Condition of the Pre-historic Antiquities of Dartmoor.”

ANTHROPOLOGICAL NOTES.

AUGUSTE COMTE, in 1852, said, “La sociologie peut être aisément conçue comme absorbant la biologie à titre de préambule, et la morale à titre de conclusion. Quant le mot *Anthropologie* sera plus et mieux usité il deviendra préférable pour cette destination collective, puis qu’il signifie littéralement *Etude de l’homme*.”—*Catéchisme Positiviste*.

PROFESSOR RAWLINSON in his *Manual of Ancient History* (1870), thus writes, "Anthropology, though not history proper, is akin to it, and is a science of which the historical student should not be ignorant. It treats of man prior to the time when "history" takes him up, and thus forms, in some sort, the basis on which history rests. The original condition of man, his primary *habitat*, or place of abode, the mode and time of his dispersion, the questions of the formation of races, of their differences, and of their affinities; these, and similar subjects, which belong properly to anthropology, are of interest to the historian, and underlie his proper field."

ANTHROPOLOGICAL SECTION OF THE SOCIETY OF THE FRIENDS OF NATURE, MOSCOW.—The expedition under the charge of M. Kerzelli to the Volga, for the collection of crania, both archæological and modern, has been successful. M. Kerzelli has brought back a number of skulls of Tatars of the Volga, and others proceeding from excavations at Solgari and other places. These are to be submitted to the examination of Professor Bogdemow, the President. M. Fedtschedko still remains at Taschkend, in Central Asia, where he is collecting a number of objects interesting to naturalists. He is likely to continue in Central Asia for another two years. The collection of crania he sent from Samarcand, for the Museum of the Anthropological Society at Moscow, has been studied by Professor Bogdanow. It was formed from the cemeteries of that city and the neighbourhood, and, therefore, it cannot be definitely said which are the skulls of Uzbecks, and which are those of Tadjiks. On examination the crania were found to belong to two distinct types, examples of which we have seen. The one is distinguished for brachycephalism, and this is considered by Bogdanow to belong to the Uzbecks. The example we have had the opportunity to inspect is much deformed. It is a short broad skull, elevated in the anterior parietal region. It has a large parieto-occipital *flattening*, extending from the middle of the parietals to the tuberosity of the occipital, which flat surface is not symmetrical, but is inclined towards the right side. This, no doubt, is the result of external influences—probably habitual lying on the back in infancy, with the head upon a hard surface—upon a naturally brachycephalic skull. The other type, regarded by Professor Bogdanow as that of the Tadjicks, is decidedly dolichocephalic, with a low receding forehead, and a hatchet-shaped face.

M. A. QUETELET'S new work, now in the press, is entitled *Anthropologie, ou Traité de l'Homme*. Its appearance is looked forward to by men of science with great interest.

PERUVIAN INCA SKULLS.—We extract the subjoined passage from a letter dated January 26, 1870, written by Herr Gratian, of Brunswick, to Chevalier von Haidinger, of Vienna:—"With regard to my palæontological researches, I beg to inform you that they are at present in a somewhat modern direction. The exploration of beds containing fossil bones, especially of the period of the mammoth, the cave-bear, &c., as well as the search after implements of the stone period, combined with cave-studies, form now my chief occupation. I have here explored a bed which has already yielded interesting

results. The acquisitions of last year include two Inca skulls from Chinchá Alta, which are in a condition quite as described by Morton, and are especially distinguished by the vertical descent of the occipital bone. These skulls were, besides other curiosities, presented to me by the commander of the North German frigate *Neptune*, who obtained them at the Huacas. There is a peculiar interest attached to them in as far as these skulls were brought to the surface in consequence of the earthquake on the Peruvian coast, which happened in the month of August, 1868."—*Mittheilungen der Anthropologischen Gesellschaft in Wien*.

THE ANTHROPOLOGY OF EASTERN EUROPE.—The following notes from Dr. Latham's *Native Races of the Russian Empire* will be read with attention at the present time. The Sarmatians form one of the three great stocks to which the inhabitants of the Russian territories belong, the others comprising the Ugrians and the Turks. The Sarmatian stock includes two sub-divisions, the Slavonic and the Lithuanian. The latter embraces the Lithuanians of Lithuania, the Lets of Livonia and Courland, and the old Prussians. All Prussia proper was Lithuanic as opposed to Slavonic. To the latter branch belong, among other peoples, the Bohemians, the Poles, certain peoples in Pomerania and Silesia, and the Great and Little Russians. In the time of Charlemagne the Elbe was the western limit of the Slavonians, and the eastern one of the Germans. The old Prussians of the Lithuanic Sarmatian stock were called by the Germans *Æstii* (Easterlings), and by the Slavonians *Gothones* (Goths). According to Prætorius, the latter was a name of contempt, "accounted for by the extent to which the population to which it applied had retained their paganism against the efforts of the propagators of the Prussian Christianity." These were the Knights of the Teutonic order, who, in the twelfth century, overrun Lithuania and Pagan Prussia, and Christianised those of its inhabitants who survived. The Lets also were subjugated by a Germanic order, and the difference now between Letland and Prussia proper is only one of degree. Both are German, so far as they are not Lithuanic. The landowners of Letland are German, and its history is German. Lithuanian history, on the other hand, is Polish; Poland and Lithuania having been united in 1386. What in Lithuania is neither Lithuanic nor Russian is Polish. As the Germans moved eastward from the Elbe, they effected alliances with the Slavonians of Mecklenberg and Pomerania, and "the line of displacement that pressed upon the old Prussians was Slavono-German, or Germano-Slavonic." Thereafter "Prussia" was used as the generic name, and the old terms *Æst* and *Goth* became obsolete, or were re-applied. *Pari passu* with the Lithuanic movements from Prussia—which led to Gothic names being given to Jutland and the Danish islands, and to two Swedish provinces—"there went on certain Slavonic ones from Mecklenberg, Pomerania, and Holstein. In Holstein the evidence of a Slavonic occupancy is historic. It is all but historic in the island of Laaland. It is an inference from more than one local name in North Jutland."

JOURNAL

OF THE

ANTHROPOLOGICAL SOCIETY OF LONDON.

NOVEMBER 1ST, 1870.

DR. R. S. CHARNOCK, V.P., IN THE CHAIR.

THE minutes of the previous meeting were read and confirmed.

The following new Fellows were elected : Matthew Heslop, Esq., 23, Spring Gardens, Doncaster ; J. R. Mortimer, Esq., Driffeld, Yorkshire ; Anthikum Venkata Nursing Row, Esq., Dabu Gardens, Vizagapatam ; James Hope, Esq., Madras Civil Service, Gangum District, Madras Presidency ; and Walter M. Parker, Esq., Warren Corner, near Farnham, Surrey.

William Storey, Esq., M.D., F.A.S.L., was elected Local Secretary for Malta ; and Frank Wilson, Esq., F.A.S.L., was elected Local Secretary for St. Paulo de Loanda.

The following presents were announced, and thanks were voted to the respective donors.

FOR THE LIBRARY.

From M. A. QUETELET—Memoires de l'Académie Royale de Belgique Couronnés in 4to, t. 34 ditto ; ditto in 8vo, t. 21 ; Bulletins, 2e série, 27, t. 28 ; Annuaire de 1870 ; Phénomènes périodiques, 1867-68 ; Notice sur le Congrès de Florence.

From the SOCIETY—Bulletin de la Société Impériale des Naturalistes de Moscou, Nos. 1, 2, 3, 4.

From the EDITOR—Nature, to date.

From Professor GARBIGLIETTI—Annuario del Museo Zoologico della R. Università di Napoli ; Additamenta et Emendationes ad Catalogum Methodicum et Synonymicum Hemipterorum Heteropterorum Italiae.

From the SOCIETY—Proceedings of the Royal Geographical Society, vol. xiv, Nos. 2, 3 ; Annual Address to ditto ditto, Sir R. I. Murchison.

From the INDIA OFFICE—Catalogue of Maps of the British Possessions in India and other parts of Asia.

From the EDITOR—The Food Journal, Nos. 6, 7, 8, 9, 10.

From the SOCIETY—Schriften der physikalisch ökonomischen Gesellschaft zu Königsberg in Pt. 8, Jah. 1, 2 Abth. ; ditto, Pt. 9, Jah. 1, 2 Abth. ; Pt. 10, Jah. 1, 2 Abth.

From the AUTHOR—Iconografia di alcun Ogetti di Remota Antichità rinvenuti in Italia. By B. Gastaldi.

From Professor STEENSTRUP—Oversigt over det Kongelige danske Videnskabelmesselskabs, Copenhagen, No. 3, 1869 ; ditto, 1868-69-70.

From the AUTHOR—Anales del Museo Publico de Buenos Aires. By Dr. Burmeister.

From IMPERIAL ACADEMY OF SCIENCES, Vienna—Sitzungsberichte Kaiserlichen Akademie der Wissenschaften, 61 B., H. 2, 3 ; Id. philos-histor Classe, 62 B., H. 1, 2, 3 ; ditto, Math-Natur. Classe, 1869, 1 Abth., H.

- 3, 4, 5, 6, 7; ii Abtheil., 4, 5, 6, 7; Almanach 1869; Abhandlungen der K. K. Geologischen Reichsanstalt, 1 Band, 1852; ditto, 2 Band, 1855; ditto, ditto; 3 Band, 1856. W. Haidinger's Naturwissenschaftliche Verhandlungen, Band 2, 3, 4. Jahrbuch der K. K. Geologischen Reichsanstalt, i, 1850, Nos. 1, 2, 3, 4; xi, 1860, Nos. 1, 2; 1861-2, Nos. 1, 2, 3, 4; 1863, Nos. 1, 2, 3, 4; 1864, Nos. 1, 2, 3, 4; 1865, Nos. 1, 2, 3, 4; 1866, Nos. 1, 2, 3, 4; 1867, Nos. 1, 2, 3, 4; 1868, Nos. 1, 2, 3, 4; 1869, Nos. 1, 2, 3, 4; 1870, No 1; Verhandlungen ditto, 1867, No. 1, 1868, No. 1, 1869, No. 1. W. Haidinger's Berichte, i Band, Nos. 1-6; ii Band, No. 7; iii Band, Nos. 1-6; iv Band, Nos. 1-6; v Band, Nos. 1-6; vi Band, Nos. 1-9; vii Band, Nos. 1-6. Uebersicht der Resultate Mineralogischer Forschungen in den Jahren 1844-49-50-1-2, by Dr. G. A. Kenngott's. Katalog der Bibliothek des K. K. Hof-Mineralien-Cabinets in Wien. General-Register der ersten Zehn Bände 1850-59. A. F. G. M. von Burgholzhhausen. Erläuterungen Zur Geologisch Bearbeiteten 8 sektion. Von A. P. Morlot.
- From Professor A. ECKER—Archiv f. Anthropologie, 1866 to 1869.
- From the SOCIETY—Proceedings of the Royal Society, Nos. 120-121, 122.
- From the SOCIETY—Proceedings of the Asiatic Society of Bengal, Nos. 5, 6, 7, 8; Journal ditto, part i, No. 1, part 2, No. 2.
- From the ACADEMY—Bulletin de l'Académie Impériale des Sciences de St. Petersburg, tome xiv, Nos. 4, 5, 6; tome xx, Nos. 1, 2.
- From the SOCIETY—Journal of the Ethnological Society of London, vol. ii, Nos. 2, 3.
- From the AUTHORS—Matériaux pour l'Histoire Primitive et Naturelle de l'Homme. 2de série. 4, 5, 6. 1870. By MM. Mortillet, Senet et Cartilhac.
- From the AUTHOR—Ancient Pagan and Modern Christian Symbolism. By Dr. Thomas Inman.
- From the INSTITUTION—Journal of the Royal United Service Institution, No. 58, 59, 60.
- From the EDITOR—The Rectangular Review, No. 1, July 1870.
- From the AUTHOR—Biology *versus* Theology. By Julian.
- From the INSTITUTION—Annual Report of the Smithsonian Institution for 1868. Medulla Oblongata, by Dr. Dean. The Indians of Cape Flattery, by J. G. Swan.
- From the SOCIETY—Proceedings of the Boston Society of Natural History, vol. xii, sequi 18, end vol. xiii, 1-14. Address at Humboldt Centennial, by L. Agassiz. Invertebrata of Massachusetts, by Dr. A. A. Gould.
- From the INSTITUTE—Historical Notice of the Essex Institute. Proceedings and Communications, ditto, vol. vi, p. 1. Bulletin, ditto, vol. i, 1869.
- From the AUTHOR—L'Homme et les Singes, by Dr. Pruner-Bey.
- From the ACADEMY—Proceedings of the Academy of Natural Science of Philadelphia, Nos. 1, 2, 3, 4, 1869.
- From the AUTHOR—Anatomiczno-Anthropologiczne Postrzezenia nad Murzynem, by Dr. Kopernicki.
- From the AUTHOR—Snuff-taking, by Dr. J. C. Murray, F.A.S.L.
- From T. BENDYSHE, Esq., M.A.—Über die Bedeutung der Sprachefur die Naturgeschichte, by Von A. Schleicher. Die Darwinische Theorie und die Sprachwissenschaft, by Von A. Schleicher. La Philosophie Positive Revue, by E. Littré and G. Wyronhoff.
- From the AUTHOR—Il Brahu; Studio di Etnologia Linguistica, by Felice Finzi.
- From the AUTHOR—Ancient Manorial Customs, Tenures, etc., of the county of Essex, by Dr. R. S. Charnock.
- From the SOCIETY—Annual Report of the Leeds Philosophical and Literary Society, 1869-70.

A verbal communication was made by Mr. CHARLESWORTH, giving some details of his discovery, and the exhumation, from a Tertiary Formation in East Anglia, of a nearly perfect skeleton of one of the gigantic bovine animals, with which the Roman legions met when they

first penetrated into the dense forests of Belgium and Gaul, and which are described by Cæsar and Tacitus under the names *Uri* and *Bisontes*. The distinctions between these two species of the ox tribe were briefly explained, and the lower jaw belonging to the lately-discovered skeleton exhibited.

DR. CARTER BLAKE congratulated Mr. Charlesworth on having been the first to bring before science reliable facts as to the skeleton of *Bos primigenius*, which had hitherto only been known by the inaccurate figures which Bojanus had given to a German academy. He thought that all testimony of Cæsar respecting a fossil ox, of which it might be said, *a nostrorum boum cornibus differt*, rather pointed to some more short-horned ox than the *Bos primigenius* of Bojanus. Cuvier was accustomed to long-horned oxen, not to short-horned oxen, and the force of the expression *a nostrorum boum cornibus differt* might be really appreciated by the student of short-horned oxen. But Dr. Carter Blake congratulated Mr. Charlesworth on the nature and value of the specimens he brought forward. Whether his specimen was referable to *Bos primigenius*, or *Bos antiquus* (seu *giganteus*), Dr. Blake would not venture to suggest.

MR. C. STANILAND WAKE, Director, read the following Report of the Delegates to the meeting of the British Association at Liverpool:—

Report of the Delegates from the Anthropological Society of London to the British Association for the Advancement of Science
Meeting, 1870. Liverpool.

By resolution passed at the meeting of the Council of the Anthropological Society of London, held on the 14th day of June last, the following delegates from the Society to the meeting of the British Association for the Advancement of Science, for the year 1870, were appointed, (namely), Mr. Gould-Avery, Dr. Richard King, and Mr. C. Staniland Wake.

Of these delegates the two former declined to act, and the following gentlemen were, therefore, appointed by the President to take their places (viz.), Mr. J. Kaines and Mr. A. L. Lewis, who with Mr. Wake, acted as delegates from this Society to the meeting of the British Association for 1870.

The first General Committee Meeting of the Association was held at Liverpool, on Wednesday the 14th of September last; and at this meeting the delegates thus appointed were present, as were also Dr. Beddoe, the President, Dr. Richard King, and other fellows of the Anthropological Society. After the minutes of the last preceding meeting of the general committee of the Association had been read, Dr. Beddoe put in a memorial, which had been prepared by Dr. R. King, and signed by various fellows of the Anthropological and Ethnological Societies, praying for the appointment of a Section of Anthropology and Ethnology. After some discussion, this memorial was read to the meeting by the Assistant General Secretary, and it was then announced that the Council of the Association had already provided for the formation of a department of Ethnology and Anthropology in Section D (Biology). In consequence of this announcement,

and of the election, which followed, of Dr. Beddoe as a Vice-President of Section D, your delegates, in conference with the President and Dr. R. King, thought it advisable not to press the present consideration of the memorial, and to rest satisfied with the recognition of Anthropology thus given by the Council of the Association.

This was the only portion of the business of the General Committee which more immediately concerned the Anthropological Society as a body. The report of the Council of the Association for the year 1869-1870, however, contained a recommendation which seriously affects the position of this, among other Scientific Societies, in connection with the Association. This recommendation related to the admission of members to the General Committee, and it was that the following rules should be adopted instead of those previously in force :

"The General Committee consists of the following classes of Members :—

Class A.—Permanent Members.

"1. Members of the Council and Presidents of the Association for the present and preceding years, with Authors of Reports in the Transactions of the Association.

"2. Members who by the publication of works or papers have furthered the advancement of those subjects which are taken into consideration at the Sectional Meetings of the Association. With a view of submitting new claims under this rule to the decision of the Council, they must be sent to the Assistant General Secretary at least one month before the meeting of the Association. The decision of the Council on the claims of any member of the Association to be placed on the list of the General Committee to be final.

Class B.—Temporary Members.

"3. Presidents for the time being of Scientific Societies publishing Transactions. Claims under this rule to be sent to the Assistant General Secretary before the opening of the meeting.

"4. Office bearers for the time being, or delegates, altogether not exceeding three, from Scientific Institutions established in the place of meeting. Claims under this rule to be approved by the Local Secretaries before the opening of the meeting.

"5. Foreigners and other individuals whose assistance is desired, and who are specially nominated in writing, for the meeting of the year, by the President and General Secretaries.

"6. Vice Presidents, and Secretaries of Sections."

The Report of the Council said as to the proposed recommendation : "The most important of the proposed changes are, that henceforth new claims to membership of the General Committee shall be forwarded to the Assistant General Secretary at least one month before the next ensuing Annual Meeting of the Association ; that these claims shall be submitted to the Council, whose decision upon them is to be final ; and that henceforth it is not the authorship of a paper in the transactions of a scientific society which is alone to constitute a claim to membership of the General Committee, but the publication of any works or papers which have furthered the advance-

ment of any of the subjects taken into consideration at the Sectional meetings of the Society."

No mention is here made of the restriction of the representation of Scientific Societies (other than those established in the place of meeting) to their Presidents for the time being, and the withdrawal of their right to appoint delegates to the Association. The impropriety of this alteration was so evident that Dr. Richard King moved, and Mr. C. Staniland Wake seconded, an amendment that the rule as to the reception of delegates from Scientific Societies should stand unaltered. Amendments, the same in principle, were moved by other members of the committee, and ultimately clause 3 of the amended rules, relating to the temporary members of the General Committee, was altered so as to allow of the appointment of a delegate from a Scientific Society, in case the President cannot attend the meeting of the Association.

On the close of the first General Committee Meeting, the committees of the separate sections met for business. Section D—for which Dr. Beddoe had been elected one of the Vice-Presidents, and of which your Director, Mr. Wake, was one of the Secretaries—was divided into three departments; that of Ethnology and Anthropology under the Presidency of John Evans, F.R.S., F.A.S.L.; that of Zoology and Botany under the Presidency of Professor Rolleston; and that of Anatomy and Physiology under the Presidency of Professor Michael Foster. The Anthropological Society was represented on the sub-committee for the department of Ethnology and Anthropology by Dr. R. King, Mr. Kaines, and Mr. A. L. Lewis, in addition to Dr. Beddoe, Mr. Evans, and Mr. Wake, officers of the section.

Public meetings of the Department of Ethnology and Anthropology, which were usually very well attended, were held in the lecture room of the Public Museum, on Thursday the 15th, Friday the 16th, Saturday the 17th, Monday the 19th, and Tuesday the 20th of September. At these meetings the following papers by fellows of the Anthropological Society of London were read.

"The Anthropology of Lancashire." By J. Beddoe, M.D.

"The Ottoman Turks." By J. Beddoe, M.D.

"The Builders of the Megalithic Monuments in Britain." By Mr. A. L. Lewis.

"The Shadows of Genius." By Mr. Walter C. Dendy.

"The Racial Aspects of Music." By Mr. J. Kaines.

"Some Forms of Interment in County Antrim." By T. Sinclair Holden, M.D.

"The Manx of the Isle of Man." By Richard King, M.D.

"On Blight in Man and in the Animal and Vegetable Kingdoms." By Richard King, M.D.

"The Physical Characteristics of the Australian Aborigines." By Mr. C. Staniland Wake.

"The Mental Characteristics of the Australian Aborigines." By Mr. C. Staniland Wake.

On Tuesday the 21st of September, a meeting of the General Committee was held to fix the next place of the meeting of the Association,

and to appoint its officers for the ensuing year; and it was resolved that the Association should meet in 1871 at Edinburgh, under the Presidency of Sir James Thompson. Dr. Beddoe, the President of this Society, was elected a member of the Council of the Association. Brighton was fixed as the place of meeting for 1872.

Before the last meeting of the General Committee, on Wednesday, the 22nd September, your delegates met to consider whether they should give notice of a motion, to be made at the 1871 meeting of the Association, for the formation of a separate section of Anthropology and Ethnology. The conclusion they unanimously came to was that, considering the manner in which the claims of the science, represented by this Society, had been met, and that Dr. Beddoe had been elected a member of the Council of the Association, thus furnishing a guarantee that the permanent recognition of Anthropology by the British Association had been obtained, such a step was not desirable. In this Dr. Richard King agreed with them. Unfortunately Dr. Beddoe left Liverpool before the close of the meeting of the Association, but he has since expressed his concurrence in the propriety of the course thus proposed to be adopted.

Your delegates cannot end this report without acknowledging the admirable and courteous manner in which the proceedings of the department of Ethnology and Anthropology were conducted by Mr. John Evans, F.R.S., F.A.S.L., who presided over its sittings, and to whom they do not doubt the formation of a separate department of Ethnology and Anthropology was in great measure due.

In conclusion, your delegates think that this report furnishes a fitting means of drawing the special attention of the Fellows of the Anthropological Society to Section 2 of the new rules, relative to the constitution of the General Committee of the British Association. The number of gentlemen who will, *in future*, be admitted to the General Committee by virtue of a purely scientific qualification will no doubt be considerably reduced. Those admitted will, however, become *permanent* members of the General Committee of the British Association, and from the use of the term "*new claims*," it would seem, that gentlemen who have already sat on that committee by virtue of a scientific qualification will again be admitted, as of course. To prevent all question, however, and in order that the interests of Anthropology may be properly represented in the British Association, it is advisable that all Fellows of the Anthropological Society who possess the necessary qualification should, as soon after July 1st, 1871, as possible, send in their claims to be placed on the General Committee.

Your delegates would also impress upon the Fellows of the Society, that the only way to maintain and improve the position accorded to Anthropology by the Association is to prepare for the next meeting such a number of good scientific papers as *must* command respect and attention.

Dated the 1st October, 1870.

C. STANILAND WAKE, *Director*.

A. L. LEWIS.

J. KAINES.

To the Council of the Anthropological Society of London.

Dr. RICHARD KING, Sir DUNCAN GIBB, Dr. CARTER BLAKE, and Mr. AVERY, spoke on the Report.

Dr. CHARNOCK then resigned the chair to Mr. Dendy, and read a paper on "The People of Marken." [This paper appears in the *Journal of Anthropology*.]

The discussion on Dr. Charnock's paper was sustained by Sir DUNCAN GIBB, Mr. DENDY, Dr. BLAKE, and Mr. LEWIS.

Dr. CHARNOCK, in answer to Sir Duncan Gibb, Dr. Carter Blake, and other speakers, said he was not aware that the Markeners had any dislike to the people of the mainland; but it was a fact that the former seldom intermarried with the latter, and that the proportion of such marriages was not more than that stated in the paper. He did not say that the Markeners were giants, but that the Dutch people so put them down, and they were certainly very considerably taller than the latter. The name of the island, as mentioned in the paper, was probably derived from a district on the mainland. The word in most Teutonic languages would mean "limit," "boundary," or "border." The people of Marken were probably descendants of the Frisabones. The Batavi occupied the district between the Waal and Maas above their junction, and the island formed by the arm of the Rhine, the Waal, and Maas, after their junction, and the ocean, which island now forms part of the province of South Holland; but a large part of the Batavi were slain in the Roman armies, and the rest were either transplanted by the Romans, or became blended with Franks, Saxons, and Frisians. Indeed the name of this people was nearly obliterated in the fifth century. In ancient times, the Frisii not only occupied what is now called Friesland, but also the present provinces of Oberyssel, Gelderland, Utrecht, and Groningen, the country now covered by the Zuider Zee (which was then nearly all dry land), and the province of North Holland, which in Lubach's map is marked "*Frisabones*." The Frisabones probably had the last part of their name from some river (perhaps the Ij), anciently called the *Abon* or *Avon*. In like manner another tribe, the *Sturii*, were so called from living near water (Celtic *stour*), and the *Marsatii*, or *Marsäci*, were so named either from dwelling on a lake, or on the sea coast (*mere-sætas*).

MR. A. ERNST, Loc. Sec. A.S.L., contributed "Notes on some Indian Remains found in Venezuela".

I. During one of the heavy rains in the last year a temporary torrent discovered, in a street of the place called El Valle (three miles south from Caracas), the burial spot of an Indian. The skull and other remains were lost, but a collar of white teeth-like bodies was secured, and presented to the Sociedad de Ciencias Fisicas y Naturales by Señor Alvarez, C.M., residing in that place. It is formed of forty-six pieces, of the size and shape indicated by a sketch exhibited, looking like soft white lime-stone. Their texture is very distinctly lamellaceous; the lamellæ being visible on the convex and concave side. It is pure carbonate of lime, dissolving without any residue in diluted muriatic acid. When examined under the microscope, after a convenient preparation, the lamellæ showed the singular structure of the Guayacan wood, easily to be recognised by the diagonal intercrossing of its

fibres. The wood being a known and prized remedy among the Indians, it is not improbable that it was wrought into pieces of apparel, or perhaps also used as a kind of talisman. *Guajacum officinale*, L., is common in the *tierra caliente*, and known under the name "Vera." The region of El Valle contains much lime, and so the collar was completely petrified.

II. In one of the sessions of the Sociedad de Ciencias Físicas y Naturales of Caracas, Dr. Manuel V. Díaz presented to the Society five small earthen figures, which had been sent to him by Dr. Gabaldon of Mérida. It was stated that they had been taken from a burial-cave near Boconó, not far from the town of Trujillo, in Western Venezuela. I hope to get further information about that interesting place, as I have invited some friends residing in the neighbourhood to explore the cave carefully, and to send to Caracas skulls, and other remains, which might be found.

It is known that the country round Trujillo was formerly inhabited by the *Tostos*, *Escuques*, *Cuicas*, and *Timotes* (A. Codazzi, *Resúmen de la Geografía de Venezuela*, Paris, 1841, p. 256, and Waitz, *Anthropologie* iii, 385). Codazzi is probably right in bringing these tribes together with those inhabiting the mountains of Mérida, and supposes that they all spoke dialects of the Muisca language, from the circumstance that the sounds *b*, *d*, *z*, which are said not to exist in the Muisca, are also wanting in all original local names known from that country. (?)

Waitz (quoting from Piedrahita, xii, 5) mentions that the Cuicas and Timotes had in their temples *idols made of clay* and wood, which they adored by offerings of cotton, precious stones, and butter of cocoa.

I have little doubt that the figures found in the cave at Boconó are the work of one of these tribes; and I believe them, therefore, interesting enough for being the object of a detailed description.

The larger is 17 centimetres high. The head is extraordinarily flattened from face to back, forming on the top a very narrow stripe (14.5 centimetres long), covered with what appears to be a plaited ornament, and running out on each side in a blunt point. The ears are well marked, and have large holes for earrings. The eyes are indicated by two deep impressions on either side of the nose, connected by a flat channel, so that the spherical form of the eyeball is tolerably visible. The throat is very short, and 7 centimetres from the vertex. The arms are comparatively small, resting on the thick and prominent thighs, but the hands are not visible. The feet are short, and show clearly the five toes. There is on the upper part of both legs a circular outcut, like a ring, and in the breast are two holes. On the hind part of the head, close to the upper margin, is another hole, leading into the hollow interior of the figure, which contains some small pebbles, or coarse grains of sand, so that the figure produces a rattling noise when shaken; just as the native instrument known under the name of *maraca*. The larger figure represents a female. A cross on the forehead is of very recent origin, probably scratched by the finder, who, as a good christian, must have been anxious to exorcise these remnants of devilish heathendom.

The second figure is smaller, (13 centimetres high), and represents a man. Its shape is the same in every respect but for the eyes, which are less carefully made. It shows, besides, more clearly than the other one, the painting it is covered with, consisting of a great number of blackish diagonal stripes, intercrossing each other in oblique angles.

The clay used for these figures contains much mica; the workmanship reveals some practice, and indicates a relatively advanced condition of the makers.

The photograph I send with this note gives a front view of the larger figure, and a back view of the smaller.

In the same cave were found numerous hatchets (?) of porphyritic diorite, in the shape of half a Malta cross, 22 centimetres long, and 8 broad.

Caracas, 18th April, 1870.

The announcements for next meeting having been made, the meeting adjourned.

NOV. 15TH, 1870.

DR. R. S. CHARNOCK, V.P., IN THE CHAIR.

THE Minutes were confirmed.

R. H. Adam, Esq., and David Kinloch, Esq., of Old Calabar, West Africa, were elected Fellows.

The list of presents was read, and thanks were voted for the same.

FOR THE LIBRARY.

From the AUTHOR—*Les Emanations; Nouvelle Théorie sur la Formation des Comètes; Storia della Casa d' Austria; Le Création et ses Mystères dévoilés.* By A. Snider-Pellegrini.

From the INSTITUTION—*Journal of the Royal United Service Institution*, vol. xiv, No. 9.

From the SOCIETY—*Transactions of the Royal Society of Literature*, vol. ix, part iii.

From the SOCIETY—*Proceedings of the Society of Antiquaries of London*, vol. iv, No. 8.

From the AUTHOR—*Dell' Indice Cefalospinale dell' uomo e nelle Scimmie Antropomorfe e del Metodo per determinario; Di un Caso di Singolare Microcefalia in una Donna.* By Professor Paolo Mantegazza.

From J. F. COLLINGWOOD, Esq.—*The Origin of Matter and its Mental Government.* By R. Laming, M.R.C.S.

From the SOCIETY—*Proceedings of the Royal Society*, vol. xix, No. 123.

From the INSTITUTION—*The Canadian Journal*, vol. xii, No. 6.

From the Hon. E. G. SQUIER—*Report on the Management of Indians in British North America by the British Government.*

From Dr. ROBERT PEEL—*Woolner Vocabulary.*

FOR THE MUSEUM.

From Dr. ROBERT PEEL—Three Skulls of Australian Aborigines and Half-Caste, and two flint implements.

MR. C. H. E. CARMICHAEL, delegate of the Society to the International Congress at Bologna, read the following communication:

To the President and Council of the Anthropological Society of London.

Although the disturbed state of the Continent, arising from the Franco-Prussian War, has caused the postponement till October, 1871, of the 5th Session of the International Congress of Anthropology and Prehistoric Archæology, and prevented my fulfilling the mission with which the Council had entrusted me, yet I hope to shew that my visit to Italy was not altogether fruitless of information. When I first reached Bologna, in time for the Congress had it been resolved to hold it, Professor Capellini, the Secretary of the Committee of Organisation, was absent. I therefore determined to return to Bologna by the time when he was expected to be at home. When we met the greeting that I received was most cordial, and I am sure all English members of the Congress who may take part in next year's session, will find an equally warm welcome. In company with the Professor I visited not only the geological and palæontological collections belonging to the university, but also the rooms set apart for the Italian Exhibition of Anthropology and Prehistoric Archæology, in aid of which the government has lately made a donation of 15,000 francs. I am glad to be able to report, what indeed was to be expected from the exertions of one so devoted to science as Professor Capellini, that whether in respect of light, space, or contiguity to the seat of the Congress, the rooms selected for the Exhibition leave nothing to be desired. It may be well to add, for the sake of those who contemplate attending the session of 1871, that the enforced delay will be a positive gain to the Exhibition, which will be enriched by several collections that would not have found a place there this year.

It may probably interest the Society to know, that excavations are being carried on in various parts of Italy, both at the Campo Santo of Bologna, where a stratum of Etruscan interments was lately discovered underneath the mediæval and modern strata, and also at the Leucadian promontory, where Professor Capellini said that traces of cannibalism had been found. Of these excavations I am promised further details, which I shall at once communicate to the Society.

I enclose a copy of the "Règlement," and list of members of the Congress, and hope next year, if still honoured by the confidence of our Society, to present matter more worthy of consideration.

CHAS. H. E. CARMICHAEL, M.A., F.A.S.L.,
Delegate to the International Congress.

London, 31st October, 1870.

The following paper was read:—

Observations on the Condition of the Blood-Corpuscles in certain Races,

BY R. H. BAKEWELL, M.D.

The following very scanty and imperfect observations on the condition of the blood-corpuscles in certain races of mankind, have only been brought under the notice of the Anthropological Society at the request of Dr. J. Barnard Davis, F.R.S., to whom the writer mentioned, in the course of conversation, what he had seen. Unfortunately the writer's eyesight began to fail him for microscopical

purposes, when the observations were still so imperfect and incomplete that he has to apologise for bringing them forward.

When investigating the symptoms and pathology of malarious fevers, the writer made numerous microscopical examinations of the blood both of the sick and the healthy. In Trinidad, owing to a very large immigration of people of various races, we have opportunities of seeing the effects of disease on Europeans—English, French, and Portuguese, besides a few Italians, Germans, and people of other nations—on Asiatics, including the different races that inhabit our Indian dominions, and Chinese; on Africans, that is, natives of Africa landed from captured slavers, and free immigrants; on Africans by descent but West Indians by birth; on Creoles of pure white descent, and of every shade of colour; and of mixed negro and Chinese; negro and Indian; Spanish and Indian; and others too numerous to recapitulate.

I soon found, in the course of these investigations, that besides the difference produced directly by disease, in the number, colour, and form of the blood-corpuscles, there were well-marked differences among the different races. For example, I found that between the blood of the flesh-eating Mussulman and the Hindoo, although coming from the same place, there was a marked distinction. The Hindoos' blood contains a much larger number of white corpuscles; the red corpuscles are smaller, less numerous, not so round in outline, the edge being sometimes almost stellate, or serrated, whilst they never, so far as my observations went, ran together like rouleaux of coin. Now it is well known that this phenomenon is described, in all books on physiology, as a characteristic of healthy human blood. The red corpuscles of the Hindoo, however, run together edge to edge, but not side to side, and thus form, under the microscope, a flat mass. This often, when the patient is weakly, or has had intermittent fever, becomes a sort of "squashy" mass. I must apologise for the term, but it is the only one which describes the appearance presented. It seems as if the weight of the thin glass cover had crushed the corpuscles into one flat mass, in which the separate corpuscles could no longer be distinguished. In noting down my observations I was obliged, for brevity's sake, to give a name to the phenomenon of aggregating like rouleaux of coin, I therefore call it "nummulating." A defect or absence of this power is found in all persons whom I have examined, who have been for a long time subject to malarious fevers.

The Hindoo's blood is marked by the characteristics above mentioned; the Mussulman's much more nearly approaches the normal standard. It nummulates rapidly and completely. The red corpuscles are well formed, much more numerous, and better shaped than in the Hindoo, and the blood is redder and thicker. So characteristic are the appearances presented, that being in conversation with the surgeon of a recently arrived immigrant ship, having Indians from Calcutta on board, as he seemed rather incredulous, I offered to take my microscope down to the immigrant dépôt, and tell him from the appearance of the blood which were Hindoos and which Mussulmans. This I did, and if I recollect right, without a single mistake. He was very much astonished.

The blood of the recently arrived European is generally rich and good, and affords a great contrast to the Hindoo, but after a time it deteriorates; it no longer nummulates, but forms squashy masses, and if the spleen is enlarged there will be too many white corpuscles.

The following notes of the appearance of the blood of two Europeans, who had resided the same time in the colony (about two years), one of whom had constantly had intermittent fever, and the other had never had it, may be contrasted with the note of the coolies, and the negro.

R. H. B. Male, aged 37. Has had much intermittent fever. Lives well. Red corpuscles numerous, normal colour; not nummulating, but forming irregular masses. White corpuscles about normal.

A. B. Female, aged 30. (No fever.) Blood normal. Red corpuscles nummulate well. No white visible.

Coolie (Hindoo). Blood very pale. Red corpuscles do not nummulate at all. White corpuscles form one-fortieth of the number on the field. Edges serrated.

Charlotte, a Coolie girl, brought over at the age of three, and educated as a Christian [*i. e.*, a flesh eater]. Age now about 20. Red corpuscles abundant, but not nummulating; squashy. Too many white corpuscles. Is a cook, and therefore lives well.

Charles, a negro, about 16. Ill fed, and rather thinner than is a thoroughly healthy negro. Red corpuscles numerous, well formed, nummulating perfectly and rapidly.

The blood of the negro, resident even in the most malarious localities, if he is only tolerably well fed, is a rich red; crowded under the field with red corpuscles, much more numerous than the white man's, and these red corpuscles nummulate with extreme rapidity. Their form is always perfectly circular. The Chinese approach the negro very nearly, but my observations on them are very few.

The coloured creoles have, when healthy, blood which approximates, more or less, to that of the negro. I have never, either at home or in the West Indies, seen the blood of a pure white so rich as that of a negro. I once thought I had, but I found out afterwards that the subject of the experiment was really a light quadroon. It is to this richness of the blood that I feel inclined to attribute their much greater insusceptibility to the malarious poison than the white possesses.

I may mention that I probably examined the blood of about a hundred different persons.

DR. CARTER BLAKE said that Rokitansky, Hefele, Simon, and Gulliver, had written much on the subject, but he was not aware that the character of non-nummulation, assigned by Dr. Bakewell to the vegetable feeding Hindoos (and other races), had been previously formulated as the distinctive character of any race. He thought that the presence or absence of white or red corpuscles might be due to the food of the subject, but that the character of "serration," assigned by Dr. Bakewell to the Hindoo, was, if an accurate microscopical observation, undoubtedly a race character. Dr. Bakewell, however, as far as he thought, did not allege that microscopical characters

were, *ipso facto*, a test of race, but rather of food, health, and other conditions.

MR. C. STANILAND WAKE, Director A.S.L., read a paper on
Tribal Affinities among the Aborigines of Australia.

In two papers recently read before the British Association, I sought to establish the special physical and mental characters of the Australian aborigines. In the course of the inquiry it appeared that all those characters were consistent with the existence of but one race throughout the entire continent of Australia. In the present paper I wish to ascertain whether this conclusion is supported by the evidence furnished by other data, connected chiefly with what may be termed art progress, and also whether these data tend to show that the aborigines of the continent have any special tribal affinities among themselves. The latter point is the more interesting, because several writers have endeavoured to trace the course of the supposed migratory movements of the various tribes from a common starting point. Thus Com. Stokes, from a consideration of the distribution of certain special characters, thinks that Eastern and Western Australia were once divided by water, and that by this channel customs were transmitted from the North to the South of the continent (p. 297). Mr. Eyre, again, by reference to the distribution of the customs of circumcision and tooth removal, came to the conclusion that Australia was first peopled on the north-west coast, from which point three great divisions spread throughout the continent, one of these proceeding to the west and south-west coasts, another through the centre of the continent to the south coast, and the third to the Gulf of Carpentaria, and thence to Fort Bourke, on the Darling (vol. ii, 405 et seq). How far this opinion is correct we shall be better able to judge when we have considered the various phenomena reserved for comparison in this paper.

Habitations.—We will begin the comparison of what may be called the “manufactures” of the Australian aborigines by reference to their habitations. The native huts are of several varieties, but the most common is *semicircular*, of the form of an oven, or beehive, made of bark, or of bent twigs covered with bark, leaves, or grass, and about four feet high. This was the character of the huts seen by Stokes in Depuch Island, on the north-western coast (vol. ii, p. 169); by Freycinet on the coast of Endracht Land in the west (vol. i, p. 481); by Cook along the eastern coast;* and of those described by Mr. Eyre as being used by the natives of South Australia (vol. i, p. 302). The description given by D’Urville of the huts at Jervis Bay,† and by Collins of those of the Port Jackson natives (vol. i, p. 255); by Oxley of the huts at Moreton Bay;‡ and by Sturt of those at Cooper’s Creek (vol. ii, p. 74), show them to be of these same form. Similar huts are referred to also by Sir George Grey as having been seen in North-Western Australia, but these were of a superior character, being made of logs.

* Pinkerton, *Voyages and Travels*, vol. xi, p. 558.

† *Hist. Gen. des Voyages*, vol. i, p. 363.

‡ Barron Field, *Geographical Memoirs of New South Wales*, p. 57.

Other native habitations seen by Commander Stokes on Bathurst Island, in the Gulf of Carpentaria, were of a different description. The framework "consisted of stout poles from fourteen to sixteen feet high, which were brought together conical at the roof, which was thatched with dried grass, so as to exclude both wind and rain" (vol. i, p. 172). No doubt the conical huts seen by Captain King on North Goulburn Island were of this character, although much smaller, they being only three feet in height. The latter were covered with bark and sand; and Dr. Leichhardt says that the huts he saw in the bed of the Van Diemen River, and further south-west, were of a similar description (p. 327, p. 331, *note*). Probably the "snug oval-shaped huts, thatched with coarse grass," seen by Stokes at Van Diemen's Inlet, in the Gulf of Carpentaria, were of the same kind (vol. i, p. 296), as were also, apparently, those used by a tribe met with by Sir Thomas Mitchell, on the Glenelg River, in New South Wales. The huts of this tribe were found to be of a "very different construction from those of the Aborigines, in general; being large, circular, and made of straight rods meeting at an upright pole in the centre. The outside had been first covered with bark and grass, and then entirely coated over with clay. The fire appeared to have been made nearly in the centre, and a hole at the top had been left as a chimney" (ii, p. 194). Captain Sturt describes huts seen by him near Hood's Creek, beyond Lake Blanche, in South Australia, which, although not conical, were made in the way thus described. He says that they were different from any he had before seen. He mentions also the peculiarity that each hut had a smaller one attached to it (i, p. 254). This peculiarity was observed by Sturt among the tribes near Cooper's Creek, further to the north-east, whose huts were more solidly built than those of the Darling and Murray tribes, although apparently not very different in form (ii, p. 189).

A third kind of hut, sometimes met with on the north coast, and in the east, may be described as *oblong*. At Careening Bay, in the north, Captain King found several different forms in use; those on the shore being for temporary habitation, whilst others on the hill near were of a more substantial construction. The ends of one of these were formed of stones, which had saplings laid across to support a covering of bark, or dried grass (i, p. 431). Sir Thomas Mitchell, in his expedition towards the Gulf of Carpentaria through Queensland, found huts near the Nive River which were "of a more substantial construction, and also on a better plan than those usually set up by the Aborigines of the south. A frame like a lean-to roof had first been erected; on this rafters had next been laid; and upon these square portions of bark, like tiles" (p. 319). Of this shape, although not so strongly built, are the huts of the Melville Islanders, described by Major Campbell. These consisted "of a single sheet of bark, formed into a shed, or mere roof, open at each end. . . . The interior space was four feet and a half long, three in width, and three feet high." These huts, however, were luxuriously furnished with rolls of soft silky bark for seats and pillows. At Beagle Bay the only approach to a hut seen by Commander Stokes was in

* Earle's *Papuans*, p. 207.

the form of a "slight, rudely thatched covering, placed on four upright poles, between three and four feet high" (i, p. 101). The two storied *gunyahs*, met with by Dr. Leichhardt near the Lynd and in the country lying round the Gulf of Carpentaria, probably originated in the use of the flat roof as a sleeping place, a curved bark covering, such as composed the ordinary *gunyahs* on the Lynd, being put over it (p. 290). Between Morning Inlet and Port Denison, McKinlay found raised platforms evidently used for sleeping places, but without any covering (p. 105).

These simple constructions are closely related to the wind-screens used on various parts of the coast, chiefly at the north and west. Thus among the buildings seen by Capt. King at Careening Bay was one, consisting of a simple slanting back supported by two uprights, but quite open at the front and sides (ii, p. 431). Péron says that the dwellings on the Western coast visited by him, were simple screens against the wind, formed of the bark of trees. These screens were, however, of a semi-circular form,* and they may perhaps show the first approach towards the circular hut. Dampier asserts that the inhabitants of the islands of the Archipelago named after him, and of the adjacent mainland, had no dwellings, and merely set up a few boughs before them to keep off the wind (i, p. 464, 467).

Canoes.—The canoe bears the same relation to water as the hut does to dry land, except that their positions are reversed, and that the former moves while the latter is stationary. The shape is different, but not necessarily so, and if "the strips of bark bent over to form a shelter from the sun," seen by Captain King at Careening Bay (i, p. 43), were inverted, and the ends sewn up, they would closely resemble the primitive Australian bark canoe. The inhabitants of the islands in Dampier's Archipelago, who have no huts, have no means of progression in the water, except by swimming. Dampier says that they have no boats, canoes, or bark-logs (i, p. 468). The same thing appears to be true of the natives of King George's Sound at the south western corner of the Continent, who, according to Captain King, have no canoes and are somewhat afraid of the water (ii, p. 122). In fact, the canoe is seemingly unknown along the whole western coast. Oldfield says that "the natives about the Murchison, and also those living hundreds of miles away from that river, possess no boats of any kind".† Commander Stokes states that he did not see the least evidence of the use of the canoe between Port George the Fourth and Roebuck Bay, and that nothing but the *raft* was noticed south of Clarence Strait, the western boundary of the northern coast (i, p. 89). Flinders, indeed, said that the natives of a small island in the Gulf of Carpentaria had slight rafts instead of canoes, and Captain King refers to the floats "consisting of five mangrove stems, lashed together to a frame of smaller wood," used instead of canoes, by the natives near Hanover Bay (ii, p. 65). Few of the Australian tribes that possess canoes have advanced beyond the use of bark in their construction. Captain King saw in Knocker Bay, near Port Essington, superior bark canoes resembling those of the natives

* Pinkerton, xi, p. 837.

† *Trans. Eth. Soc.* (1865), p. 254.

of Blue Mud Bay, in the Gulf of Carpentaria, as described by Flinders (i, p. 90). It is possible, however, that these, like the canoes used by the natives of the Coburg Peninsula, as mentioned by Commander Stokes, are obtained from the Malays, although this is hardly probable, judging from the superior construction of the Melville Island canoes as described by Major Campbell.* Commander Stokes when proceeding up the Adelaide River met natives in a very pretty bark canoe, fifteen feet long, and about two feet deep (i, p. 423). On the other side of the Continent, in South Australia, we find bark canoes twenty feet long and capable of holding seven or eight people. Here, however, the spear is used for a paddle.† It is strange that, according to Flinders, the Port Lincoln natives had no canoes (i, p. 246), although Cook found them in use along the whole length of the eastern coast. These were usually about ten feet long, holding four persons,‡ and were propelled by paddles, about two feet in length and two inches broad at the blade,§ except in shallow water when these were propelled by long poles. This eastern coast canoe was made only of the bark of a tree bent and tied up at the ends, and it was probably not much better than those of Rockingham Bay, in the north east, which were described by Captain King as being very fragile and paddled with small strips of bark (i, p. 200). The raft of the north-western coast is replaced in the north-east by the hollowed log. Cook noticed that the canoes in the latter locality were formed by hollowing out the trunk of a tree, apparently by fire; and he said that they were so narrow that "they would often be upset, if it were not for the outrigger with which they are provided." Mr. Baines, in referring to the canoes of the north-eastern coast says, that some were of very rude construction, "being in fact mere logs capable of carrying a couple of men. . . . Others were of greater size and power, being large hollowed logs, very straight and narrow, and steadied on either side by other logs, pointed at the ends, and acting as outriggers, neatly enough attached by pegs driven into them through a framing of bamboo. Others again were strictly double canoes, two of the narrow vessels being connected by a bamboo platform so as to be parallel to each other at some little distance apart."|| Whether or not the outriggers and double canoes of the north-eastern coast have been, as is usually supposed, derived from the Pacific Islands, it is difficult to determine. Certainly, this is the only part of the Australian Continent in which the bow and arrow are used.

Weapons.—A reference to the weapons of the Aborigines may fitly be made here, and the purpose I have in view will be the best attained by taking the most important of them in order and showing the range of their use. The *spear* is employed, so far as we know, among all the tribes, the statement made by Oxley, that the only weapon *seen* among the natives on the banks of the River Tweed, in Queensland, was a wretchedly formed stone hatchet,¶ amounts to little. The spear itself, however, sometimes varies in the form of its

* *Loc. cit.*, p. 206.

† *Loc. cit.*, p. 534.

‡ Wood, *Natural Hist. of Man*, ii, p. 7.

† Eyre, i, p. 314.

§ *Jour. of a Voy., etc.*, 1771, p. 111.

¶ *Loc. cit.*, p. 39.

head. Most of the tribes understand the hardening of the wooden tip in the fire, and few of them, apparently, are without the barbed spear. The natives of Shark's Bay, however, use a form of spear, "from fourteen to sixteen feet long, and with eight to twelve pairs of large barbs formed from the solid wood;" which is more powerful, says Oldfield, than any spear to be found elsewhere on the Continent (p. 262). The natives of Melville Island, however, have a similar spear, and also a special war-spear, sharpened at both ends, called *yugo*.* Flinders states that the inhabitants of a small island in the Gulf of Carpentaria had very rudely made spears (ii, p. 138), but it is not far from this spot, at Port Essington and on the northern coast, that the most formidable of these weapons are used. Mr. Wood figures two spears from the former place, which are beaded with chipped flints nearly as large as a man's hand.† These are evidently intended for use as pikes (ii, 38, 40.) Cap. King mentions that among other articles taken from natives in Hanover Bay was "a bundle containing several stone spear heads, about six inches long, curiously worked, and with both edges serrated" (ii, p. 66). The only other form of spear that need be particularised is the long, heavy weapon, with bamboo at one end, seen by Mr. Stuart in the possession of the natives at Hayward Creek, and which they had evidently got from the northern coast.‡ The *throwing stick* is apparently not so universally known as the spear, although its use is very widely spread. If we begin with the small island in the Gulf of Carpentaria, already mentioned as having been visited by Flinders, we find that this instrument was there known (ii, p. 238). It is employed, says Stokes (i, p. 393), by the natives of the Coburg Peninsula, although not by those of the adjoining Melville Island;§ by various tribes in the neighbourhood of Shark's Bay, mentioned by Oldfield;|| at Swan River, and still further south at King George's Sound; it is used, moreover, in some parts, at least, of South Australia,¶ although not mentioned by Mr. Eyre; on the south-eastern coast where visited by Cook;** in Queensland; and, to return again to the north, by the natives of the York Peninsula, and those of Hanover Bay, seen by Capt. King. In the interior the throwing-stick was seen by Stuart among the natives at Bishop's Creek (p. 205), and apparently among the desert tribes near Cooper's Creek, whose weapons are described as being "similar to those ordinarily used by natives of other parts of the Continent" (p. 138). It was found also by Leichhardt among the natives near the South Alligator River (p. 492). Being thus so widely spread, we may be almost inclined to believe that it is used throughout the whole Continent. Sir George Grey, however, on the authority of Mr. Usberne of the Beagle, asserts that it is not known at Roebuck Bay, while it was not seen by Commander Stokes at Villaret (i, p. 72), nor by Captain King among the natives near the Bowen River (i, p. 356). Flinders declared that the throwing-stick was not used by the natives of St.

* Earle, p. 205.

† See also King, i, p. 86.

‡ *Explorations in Australia*, p. 442.

§ Campbell, *loc. cit.*, p. 205.

|| *Loc. cit.*, p. 262.

¶ Wood, ii, p. 43.

** *Loc. cit.*, p. 554.

George's Sound, but this is now known to be incorrect, and other travellers may possibly be as much in error as Flinders. The fact of its not being seen is no real proof of its non-existence.

The use of the *boomerang* is certainly not universal throughout the Australian Continent. It is said by Stokes (i, p. 393) to be not used, for instance, by the natives of Melville Island nor by the Port Essington tribes, although it is known, as we learn from Mr. Eyre (i, p. 307), under the name of *kiley* to those of Western Australia, as the *wagno* to those of the south, and as the *boomerang* to the eastern natives. Captain King says, however, that this weapon was not seen at King George's Sound (ii, p. 122), nor was it among the articles taken at Hanover Bay by this explorer (ii, p. 66). It was found, nevertheless, at the Bowen River, although of a smaller size than that used by the Port Jackson natives (i, p. 356). The boomerang is also known to many tribes in the interior of South-Eastern Australia. Thus it is employed on the Murray River,* and, judging from the language of Mr. Stuart (p. 138), amongst the tribes in the neighbourhood of Cooper's Creek. Stuart found it also further inland, near Mount Hamilton, north of Chamber Creek (p. 131), and towards the centre of the Continent, north of Hayward's Creek (p. 216); while Leichhardt saw the same weapon among the natives near the Macarther River (p. 413).

It is not necessary to refer particularly to the short throwing club, the *waddy* or *dowak* (called *bwirri* in South Australia), which is the most ordinary weapon of nearly all the Australian tribes, or to the larger club, preferred by the Port Essington tribes,† and which is possessed also by the natives of New South Wales.‡ The use of the *wooden-sword* appears to be very partial, and confined, according to Mr. Oldfield, to the eastern natives.§ Dampier, indeed, says that the natives of the mainland visited by him had the wooden-sword (i, p. 467), but he may have mistaken the boomerang for this weapon. Mr. Eyre, however, expressly says that the two-edged sword (*katta-twiris*) is used by the tribes to the north of Adelaide (i, p. 308). Stuart found this weapon also among the natives at Bishop's Creek in the interior (p. 205). Its use does not appear to be universal among the Eastern tribes, and although Cook's companion describes it as having been seen on the south-east coast,|| yet how far its use there extends is somewhat doubtful. Little reference is necessary to the *bow and arrow*, a compound weapon used by some of the north-eastern coast tribes, as there is little doubt that, as Mr. Wood supposes (see ii, p. 47), it has been derived from a Papuan or Polynesian source. This idea is somewhat confirmed by the statement of Flinders that, although the natives at Caledon Bay, in the Gulf of Carpentaria, had not the bow and arrow, yet they understood its use (ii, p. 212).

Death and Funeral Customs.—Probably among no other people are

* Wood, ii, p. 51.

† Stokes, i, 293.

‡ Wilkes, *United States Exploring Expedition*, ii, 192.

§ *Loc. cit.*, p. 266.

|| *Journal of a Voyage*, etc., p. 111.

there so many modes of disposing of the bodies of the dead as those practised by the Australian aborigines. It is impossible to describe these various modes in detail, and I shall, therefore, endeavour to ascertain by comparison whether special forms are found in different parts of the Continent. In Western Australia the usual custom is to bury the body in a squatting position, a small hut of rushes, grass, etc., being erected over the grave, "and on it is placed the arms and personal property of the deceased." For some time after burial, and occasionally during a period of three or four years, a fire is daily lighted on the grave. When women are allowed to die a natural death, they appear also to be buried, but without any particular ceremonies. The graves of children, adds Mr. Oldfield, "are frequent, a heap of stones, without any of the insignia which adorn the burial place of the adult, alone marking the spot, and they are not held in such evil repute as are those of the men" (p. 248). Wilkes says that the mode of burial is much the same among the natives of New South Wales as among those of other parts of the coast, and this mode agrees generally with that already described. Above the grave the excavated earth is placed, forming a conical heap eight or nine feet high. The trees around are marked with incisions and during these operations fires are kept burning near the place, to drive away evil spirits (vol. ii, p. 196). But this is not the only mode of disposing of the dead in New South Wales; as Collins describes the *burning* of the body of a woman. The ashes, however, were collected and a tumulus erected over them by the husband (vol. i, p. 606). In the interior along the courses of the Darling, the Lachlan, and the Murrumbidgee, Sir Thomas Mitchell found grave mounds, although the burial places were not always alike in form and arrangement (vol. ii, p. 113).

Dr. Lang, on the authority of Mr. Mitchell, one of the Commissioners of Crown Lands, describes a curious mode of dealing with the dead as being practised by a tribe in New South Wales. The body is placed on a raised stage, at the ends of which fires are kept burning. After the flesh has decomposed, the bones and skin are carefully wrapped up, and carried about for some time by the tribe, being ultimately deposited in a hollow log. This agrees well with what Mr. Eyre says of the burial customs of the South Australian natives. Mr. Meyer describes four modes of disposing of the dead as practised at Encounter Bay. Among these, burial is the portion of old people; "middle-aged persons are placed in a tree, the hands and knees being brought nearly to the chin, all the openings of the body, as mouth, nose, ears, &c., being previously sewn up, and the corpse covered with mats, pieces of old cloth, nets, &c. The corpse being placed in a tree, a fire is made underneath, around which the friends and relatives of the deceased sit, and make lamentations. In this situation the body remains, unless removed by some hostile tribe, until the flesh is completely wasted away, after which the skull is taken by the nearest relative for a drinking cup. The third mode is to place the corpse in a sitting posture, without any covering, the face being turned to the eastward, until dried by the sun, after which it is placed in a tree.

* Oldfield, p. 245.

† Queensland, p. 362.

This mode is adopted with those to whom it is intended to show some respect. The fourth method is to burn the body; but this is only practised in the case of still-born children, or such as die shortly after birth" (i, p. 345). Upon the mounds, over the graves of the buried, huts are erected, as in Western Australia, "to shelter the dead from the rain." Mr. Eyre adds that "nets, but not implements, are sometimes buried with the body" (p. 349). The second mode here described is that referred to by Mr. Mitchell as practised in New South Wales, and it is found with some variation throughout a great part of Eastern Australia. Thus, near Lake Alexandrina, the body is placed upon a platform, or bier, upon high poles of pine, put upright in the ground, bandages being first placed "round the forehead and over the eyes, and tied behind. A bone is struck through the nose, the fingers are folded in the palm of the hand, and the fist is tied with nets, the ends of which are fastened about a yard from the hands; the legs are put crossing each other."* Dr. Lang says, as to the Queensland tribes, that, when bodies are not eaten, they are either burned, buried, suspended in trees, or left to decay in the hollows of trees (p. 359, *n*). These are really the four modes described by Mr. Meyer as practised at Encounter Bay, although probably with some variation in details. Mr. Stuart, in his adventurous journey through Central Australia, saw a large grave mound near the Frew River—about lat. 27 deg. S.—(p. 143), but when he reached Hayward Creek, about eight degrees further north, he found that the natives placed the bodies of their dead in trees, and these suspended bodies were extremely numerous (p. 220). Near Hawker's Creek, Ashburton Range, a small and beautifully made canoe, containing the bones of a child, was seen in a tree (p. 286), and another of the same description was met with at Lawson's Creek, still further north (p. 288). Within a few miles of the coast was a raised frame-work, which Stuart graphically describes as having been used for "smoke-drying a dead black fellow" (p. 404). Finally, Com. Stokes, when on the Flinders River, in the Gulf of Carpentaria, saw a singular looking bundle in the branches of a tree, and this, on examination, was found to contain the decaying body of a native. Some weapons were deposited with the body as in an ordinary burial (p. 296).

The wide spread of this last named mode of burial is certainly remarkable, although it may possibly have arisen independently, and have originated in the difficulty, under certain conditions of soil, of making a grave with the imperfect tools possessed by the natives. This custom, however, sometimes takes a still more curious form. Sir Thomas Mitchell, when near the Balongo River, in the interior of Eastern Australia, saw two women with bundles on their backs, and he found that these bundles contained mummified bodies, doubtless of their dead child.† An analogous custom is not uncommon among various tribes in New South Wales and Queensland, who carry about with them for a considerable time the skin and bones of the deceased; while among the Queensland natives the skin appears to be always

* Eyre, i, p. 345.

† *Jour. of an Expedition*, etc., p. 109.

preserved for certain superstitious purposes.* Another custom, still more strange, is that of relatives of the deceased preserving his skull and using it for a drinking-vessel. This habit appears to be not uncommon among the South Australian tribes. Mr. Angas has figured one of these skulls, which was carried by a little girl, ten years of age, who thus honoured her mother's memory.† Certainly the most extraordinary mode of disposing of the dead is that detailed, on apparently good authority, by Dr. Lang. He says, that in the interior of Queensland, "the bodies of the dead, whether they fall in battle or die a natural death, are, with the exception of the bodies of old men and women, uniformly eaten by the survivors." Davies, the informant, gave a full description of the proceedings which take place at these cannibal burials, and his testimony is certainly confirmed by that of the Rev. K. D. Schmidt, who says that the natives of Moreton Bay follow a similar practice. Dr. Lang states that Mr. Mitchell has met with this cannibal custom also in New South Wales (p. 355 et seq.) That cannibalism is nearly, if not quite, universal throughout Australia can now hardly be doubted. Mr. Oldfield refers to its existence in Western Australia, in the neighbourhood of Shark's Bay, although practised only as an extraordinary means of satisfying hunger (p. 287). Mr. Eyre says, as to the South Australian natives, that cannibalism is not common among them, "though there is reason to believe that it is occasionally practised by some tribes, but under what circumstances it is difficult to say" (i, p. 255). McKinlay was told by a native that the body of one of the murdered companions of Burke had been taken from the grave and eaten (p. 22). So, Stuart's party found burnt human bones at Howell's Ponds in the far north, this being, says Mr. Stuart, a new feature in native customs (p. 348).

An explanation has been found in cannibalism for the peculiar belief universally entertained by the Australian natives, that white people are black men who have returned from the grave. It is hardly necessary to furnish authorities for the universality of this belief, it being so well established. Mr. Ridley remarks that the natives have everywhere applied to white men the word originally meaning 'ghost,' or 'supernatural being'.‡ The explanation of the notion, as given by Dr. Lang, is that before the body is eaten at the cannibal burials the outer skin is removed, bringing into view the inner skin, which is white or of a light colour (p. 355). White people, therefore, according to this view, are thought to be blacks without their black skins. If this be the real explanation of the belief, the practice of cannibalism must be, or have been, as universal as the belief itself.

The mourning and other customs which follow death are nearly the same among all the native tribes. Sir George Grey says "that the custom of lacerating themselves at burials is found among the aboriginals of all parts of Australia. Moreover, many of these natives, when at a funeral, cut off portions of their beards, and singeing these, throw them upon the dead body; in some instances they cut off the beard of the corpse, and burning it, rub themselves and the body with the singed portions of it" (ii, p. 335).

* Lang, pp. 357-8.

† *Savage Life*, p. 68.

‡ Lang, p. 445.

Another custom which is apparently universal throughout the continent, and which has arisen from the belief that death in the vigour of life, without a visible cause, must have been occasioned by sorcery, is that of blood-revenge, this being required also when the deceased falls by the hand of an enemy. The modes pursued to discover the sorcerer vary in different parts of the country,* but they all have the same end. The remarks of Sir George Grey on this subject, as to the western aborigines, will apply to the natives of the whole continent. "The holiest duty," says Sir G. Grey, "a native is called on to perform is that of avenging the death of his nearest relation, for it is his peculiar duty to do so; until he has fulfilled this task, he is constantly taunted by the old women; his wives, if he be married, would soon quit him; if he is unmarried, not a single young woman would speak to him; his mother would constantly cry, and lament she should ever have given birth to so degenerate a son; his father would treat him with contempt, and reproaches would constantly be sounded in his ear." The effect of this *lex talionis* is increased by the application of the principle, "that all the relatives of a culprit, in the event of his not being found, are implicated in his guilt." Until, therefore, the criminal has been despatched, all those of the same family as himself are insecure of their lives, and are compelled to take precautions against attack. This operates, in most cases, to induce all parties to join in pursuit of the murderer. If this is not successful, the pursuers slay any other person they may meet in the land to which the murderer has fled (ii, p. 238). It is now that the great evil of this blood-custom is fully exhibited; for the fresh death must be atoned for, and hence may arise a continued series of atrocities, which may lead to a tribal war, or to the extermination of a family.

The inconveniences of this blood-custom have not been overlooked by the natives themselves, and we find, in various parts of the continent, an attempt made by the less savage tribes to mitigate its evils. Mr. Angas describes the funeral of a boy belonging to a South Australian tribe, which was commenced by a sham fight. "This," says Mr. Wood, "is held in consequence of a curious notion prevalent among the aborigines, that death from natural causes must be ransomed with blood. It suffices if blood be drawn even from a friend, and the mode by which they make the required offering, and at the same time gratify their combative nature, is by getting up a sham fight, in which some one is nearly sure to be wounded, more or less severely" (ii, p. 89.) Collins long since drew attention to this curious practice among the Port Jackson natives (i, p. 602). He says, also, that "the shedding of blood is always followed by punishment, the party offending being compelled to expose his person to the spears of all who choose to throw at him." Moreover, on the death of any person, "the friends of the deceased must be punished, as if the death were occasioned by their neglect" (i, p. 586). Collins gives some curious particulars of this ceremonious blood-drawing, as practised among the natives of New South Wales. In some cases there is a near approach to the European duel; everything being done with the strictest regard

* See a graphic description by Mr. Oldfield, *loc. cit.*, p. 246.

to honour. Mr. Eyre says of the South Australian natives, that at the annual gathering of the tribes "expiation is made in some way for the deaths which have occurred since the last meeting;" for, "as the natives do not often admit that the young or the strong can die from natural causes, they ascribe the event to the agency of sorcery, employed by individuals of neighbouring tribes" (i, p. 219). Sir George Grey refers to the fact of duels with spears taking place in Western Australia, between persons who have quarrelled; but it does not appear from his account that the practice has any relation to the custom of blood-revenge.

Initiatory Rites and Tribal Marks.—To an ordinary reader the question of tribal marks is of little interest, but to an anthropologist it is hardly second to any we have been considering. These marks are connected with the rites of initiation into the privileges of manhood, and they have been used as a test of affinity of the tribes presenting them. Thus Mr. Eyre says: "At the Gulf of Carpentaria the rite of circumcision is performed; at Swan River, King George's Sound, and nearly three hundred miles to the eastward of the latter place, no such rite exists. Round the head of the great Australian Bight, and throughout the whole Port Lincoln Peninsula, not only is this rite performed, but a still more extraordinary one conjoined with it.* Descending the east side of Spencer's and St. Vincent's Gulf, and around the district of Adelaide, the simple rite of circumcision is retained. Proceeding but a little farther to the banks of the Murray, and its neighbourhood, no such ceremony exists, nor have I ever heard of its having been observed anywhere on the south-eastern, or eastern parts of the continent" (i, p. 332). Commander Stokes says that this rite is only performed at the north and south of the continent (ii, p. 2). In this, however, both he and Mr. Eyre are mistaken, as Mr. Oldfield states that it is used by the Angardiés, near the Murchison River, on the west coast (p. 252). Again, Sturt observed it among some natives near Lake Blanche (i, p. 209), in the interior, towards the boundary of the eastern provinces, and also at Mount Hopeless (i, p. 274), and in the neighbourhood of Lake Torrens (i, p. 341). Leichhardt, moreover, found it prevalent as far north as the Macarther River (p. 413), thus bringing it round once more to the Gulf of Carpentaria.

Another custom, which is widely spread, is that of removing one or more of the front teeth from the upper jaw. On the Gulf of Carpentaria Flinders saw natives who had lost two of these teeth (i, p. 137), and others, at Caledon Bay, who had lost only the one on the *left* side (i, p. 212). At Port Essington, according to Commander Stokes, the latter custom prevails (i, p. 393), as it does also on Melville Island.† At Clarence Strait, says Stokes (p. 410), the natives had lost two front teeth; as was also the case with those up the Adelaide River (p. 423). Commander Stokes says, as to the natives between Port George IV and Roebuck Bay, that in some cases only they want the two fore-teeth in the upper jaw; and while in any one tribe in which the custom prevails, it seems to be unanimous, it

* Mr. Eyre adds, in a note, "funditus usque ad urethram à parte inferâ penis."

† Campbell, *loc. cit.*, p. 200.

does not appear to be by any means universally diffused along the whole north-western coast (i, p. 88). At Beagle Bay only one tooth is extracted (i, p. 92), and the custom appears to be altogether wanting among the tribes of the western and southern coasts. It reappears, however, according to Mr. Angas (p. 216), in South Australia, and also in New South Wales. A very graphic illustrated description is given by Collins, of the initiatory ceremonies practised by the Port Jackson natives, among which is the removal of one of the front teeth (i, p. 565, et seq.). Dr. Lang says that the natives of Queensland perform exactly the same initiatory ceremonies as those described by Collins, except that they do not suffer the loss of a tooth (p. 342). He adds, however, that even this is sometimes removed, and he thinks that this custom, with others to be mentioned, were at one time known to the Queensland tribes (p. 344). At this time, at least, it appears to be unknown to any of the north-eastern coast tribes. McKinlay, however, met with it at Morning Inlet, towards Port Denison (p. 101); Sir. J. Mitchell on the Darling (i, 218, 258); and Leichhardt near the Mackenzie River (p. 110)—the left front tooth having been removed in this case, as among the Caledon Bay natives. The custom appears again in the north-eastern part of South Australia; the natives seen by Sturt near Mount Hopeless (i, p. 274), having lost the right upper tooth, while those near Lake Torrens (i, p. 341), and at Cooper's Creek (ii, p. 61), wanted two of the front teeth.

A third practice of this nature, which is very common throughout Australia, is the boring of the septum of the nostrils, for the reception of an ornament. This custom is almost universal among the tribes of the Coburg Peninsula and neighbourhood, and the adjoining Melbourne Island.* Commander Stokes observed, at Clarence Strait, a boy with a thin stick two feet long through the cartilage of his nose (i, p. 410.) The natives, at both Shoal Bay and Point Emery, also practise this rite, but it is said not to be known to those along the western coast. This may be open to question, however, as Mr. Oldfield, who writes about the Shark's Bay and Murchison River natives, says that "the practice of boring the septum of the nostrils is common all over New Holland, and is generally performed after matriculation" (p. 252). All the natives seen by Mr. Eyre, from the Port Lincoln Peninsula to the Great Bight, had undergone this operation (i, p. 318); and Péron met with the same custom at Port Western, in South Australia.† Among some of the south-eastern tribes nose-boring is practised for both sexes,‡ and Collins says, that at Port Jackson the nose-bone, or reed, was the principal ornament of the men, and was sometimes used by the women, the small leg-bone of the kangaroo being usually chosen (i, p. 552). At Moreton Bay—if we may believe Barron Field's informant, Oxley (p. 61)—the performance of this operation is an hereditary privilege. Cook seems to have found it to be practised all along the eastern coast;§ and his companion voyager states that in the north-east bones were worn in the ears as well as in the nose.‡ Captain King observes that natives at Rockingham Bay had

* Earle, pp. 199, 215.

† Angas, p. 225.

§ *Journal of a Voyage, etc.*, p. 122.

† *Loc. cit.*, p. 900.

§ *Loc. cit.*, p. 555.

the septum pierced, but no ornament was worn there (i, p. 200). It is curious that this custom, if we may judge by the absence of reference to it by travellers, is almost unknown to the interior tribes. The only mention of it I have met with is in the case of a boy seen by Leichhardt in his overland journey to Port Essington (p. 349).

The practice of making embossed cicatrices on the skin is more generally prevalent among the Australian aborigines than any of the preceding customs. It is found among the tribes of the Coburg Peninsula, and of Melville Island,* and was observed by Captain King among the natives of Lewis Island and the neighbouring mainland (i, p. 44). The horizontal breast-scars made by the latter were seen by Commander Stokes on the Roebuck Bay natives (i, p. 182), and those of Port Cunningham and Beagle Bay, in the north-west (i, p. 92). Sir George Grey mentions that the bodies of the aborigines of Western Australia are marked with scars and wales; but Mr. Eyre, on his journey round the Great Bight, met with only one native thus disfigured (i, p. 318). This curious practice forms the fourth stage of initiation among the tribes of the Adelaide district, each of whom, says Mr. Eyre, has a distinct mode of making the incisions (i, p. 334). Cook does not mention it as performed among the eastern coast natives, although he refers to their painting the body.† Collins, however, says that scar raising was practised by the natives of New South Wales, and he adds that "sometimes the scars had been cut to resemble the feet of animals" (i, p. 552). Oxley observed the same custom at the River Tweed,‡ and Barron Field says of the natives of Pumice Stone River, near Moreton Bay: "The practice of scarifying with sharp shells, seen among the Sydney natives, was found here, but the cuts were deeper, and made with great regularity" (p. 62). Captain King observes of the natives at Hanover Bay, that their bodies were scarred all over (ii, 65.) The interior tribes appear to be little addicted to this custom. Captain Sturt, indeed, met with some men near Lake Torrens who had large scars on the breast, but others seen near the same place were not thus marked (i, p. 341, 349). So McKinlay saw natives near the Leichhardt River, towards Port Denison, who were "marked down the upper part of the arm and on the breast and back" (p. 96). Mr. Wood says that in the photographs in his possession, which represent natives from various parts of the continent, these scars are very prominent; and he adds that there is not an individual who does not possess them (ii, p. 13). From this it might be inferred that they are universally used. The inference, however, would be incorrect, as several travellers expressly assert that these scars are absent from natives of different localities. Thus Captain Sturt says of the natives seen near Lake Torrens, and also of the fine Cooper's Creek tribe, that they were not disfigured by scars (i, p. 341, ii, p. 61). Sir Thomas Mitchell makes the same remark as to natives seen by him south of the Darling River (i, 261).

If we summarise the geographical distribution of these several rites,

* Earle, p. 201, 215.

† Barron Field, p. 39.

‡ Sir Thomas Mitchell met with painted tribes on the Gwydir and the Darling.

we find that *circumcision* is the most prevalent at the northern and the southern parts of the continent, it being found, however, in the west, near the Murchison River, and also in the interior of South Australia. *Tooth-extraction* is found in the north and north-west, among the tribes of the south-eastern coast, in New South Wales and sometimes perhaps in Queensland, and in the interior of South Australia. *Nose-perforation* is practised, if not by all the tribes, yet among those of the north and north-west coasts, near Shark's Bay and the Murchison River in the west, and along the southern and eastern coasts. Finally, *scarifying* is found among the northern natives, those of the western coast (although, apparently, not among the south-western tribes), in Southern Australia, and probably along most of the Eastern Coast.

From the curious distribution of these rites, and their almost universality, it has been suggested that one or more of them were at one time generally observed throughout the whole continent. Thus, Dr. Lang thinks that the removal of the teeth, and the perforation of the septum of the nose, were at one time universal; and Commander Stokes says the same of circumcision. The natives have undoubtedly a tendency to give up their peculiar customs, when they come into contact with Europeans, and they may occasionally do the same under other circumstances. The existence of tribes, like the Cooper's Creek tribe, who do not observe any of the rites referred to,* can hardly be accounted for in any other way. The men of this tribe are extremely fine and intelligent men, and they may possibly have been led to give up customs of which they did not see the value. Sir Thomas Mitchell said that the tribes who were his most determined opponents on the Darling, were those who had not undergone the usual loss of front teeth. It may be noticed, moreover, that some of the tribes near the Gulf of Carpentaria, and also several of those seen by Sturt, in the interior of South Australia, had undergone both circumcision and the loss of one or two teeth, so that these are evidently not substitutory rites, although in most cases one or other has been given up, supposing them both to have been at one time generally observed. Nose-perforation and scarifying are even now nearly general around the coast, although not so prevalent, apparently, in the interior, where the best tribes are usually found.

There is another rite occasionally met with in Queensland, which Dr. Lang thinks has also at one time been universally observed. It is the removal, by the women, of the two lower joints of the little finger of the left hand.† This custom still prevails among the New South Wales natives, as it did in the time of Collins, who gives as the explanation of it that these joints of the little finger were supposed to be in the way when the women wound their fishing lines on the hand (i, p. 552). Whether this explanation is the proper one may be doubted. It is curious that Captain King found the men of Beagle Bay mutilated by the removal of one finger joint (i, 92).

Although the preceding facts may not themselves furnish

* Sturt, ii, p. 61.

† Lang, i, p. 344. See also Barron Field, p. 62.

sufficient proof of a unity of race among the aborigines of Australia, they are nevertheless not inconsistent with such a conclusion. They appear, however, to establish the existence of certain special affinities between the tribes of particular localities, and I will endeavour, in a few words, to trace these so far as the data at our command will allow. The most noticeable facts are, that on the west coast the natives have no canoes and very inferior huts, if, indeed, they have any weather protection other than wind-screens. The huts used, moreover, are of the simple semi-circular form which is found along the southern and eastern coasts, and, apparently, far into the interior of the continent. In the east the native habitations are of inferior construction, as is the case also with their canoes, there being a pretty close agreement in both of these particulars between the eastern and southern natives. The distribution of native weapons, throughout the east, south, and west, exhibits analogous phenomena. Thus the throwing-stick and boomerang are found, with few exceptions, throughout the whole of this portion of the continent. The exceptions are the north-west (Roebuck Bay and Cape Villaret), and the north-east (Bowen River), for the throwing-stick, and the south-west (King George's Sound), for the boomerang. In some parts of the east, and in the southern interior, the wooden sword is used, but this weapon appears not to be known in the west or south-west. A consideration of the burial customs prevalent among the various tribes yields similar results. In the west the simple burial is the most usual, if not the only, mode of disposing of the dead. This mode is also practised in the south and east, although only for particular classes—the old or the very young. Among the southern and eastern tribes, however, two other modes of dealing with the dead have been introduced. These are the burning of the body; or its exposure in a tree, or on a platform, until the flesh is decayed. When this has taken place, either the bones and skin, or the skull alone, is usually preserved for a considerable time afterwards. A comparison of the native customs in the northern part of the continent with those of other regions reveals several peculiarities. There the huts, instead of being semi-circular, are usually conical, the oblong single, or storied, *gunyah*, being, however, frequent in some parts. The canoes of some of the northern tribes are of a superior description, although still made of bark. So, the spear among these tribes is quartz-headed, and they have, moreover, a peculiar form of throwing-stick; but they do not appear to have the boomerang. The burial customs of the northern natives are not so well known as those prevalent in the south, but judging from the reports of explorers, the usual mode of disposing of the body is by exposure, either on a platform or in the branches of a tree. In the north-east of the continent two peculiarities are found in the shape of the double canoe, or canoe with outrigger, and the bow and arrow. These, however, may probably be referred to a foreign origin.

Several inferences may be derived from the preceding facts. In the first place, the phenomena presented by the generality of the western natives are on the whole of a more simple character than those exhibited by the aborigines of any other part of the continent, agreeing

with the milder disposition they apparently possess. Secondly ; the southern and eastern natives agree, generally, in their customs with the aborigines of the western part of the continent, but they present certain peculiarities which seem to suggest an external influence. This influence can have been received only from the north, and there, indeed, we find in full operation those very customs, or phenomena, which constitute the differentia between the natives of the west and those of the east, such are the curious suspensory modes of burial. The conical hut of the northern natives is met with in the south-eastern part of the continent ; and the peculiar burial custom of the former is also widely spread among the latter tribes.

A comparison of these conclusions with that derived from a consideration of initiatory rites or tribal markings is not uninteresting. Of the latter, as we have seen, the scarifying of the skin, and the perforation of the nose cartilage are practised throughout nearly the whole continent, at least at its outer margin. The natives of the south-west, who are said not to have the boomerang, appear also not to have these tribal customs. The removal of one or more of the front teeth is practised in the north and north-west, in the south-east and east, and in the interior of South Australia, whilst the rite of circumcision is limited to the northern natives and those of the south, extending, however, to the interior of South Australia, and being moreover occasionally found in the west. This being so, it would almost seem that scarifying and nose-perforation are, like the use of the semicircular hut, primitive customs at one time common to all the aborigines ; that the removal of the front-tooth is a custom almost limited to the canoe-making peoples of the north, south and east, who also possess in common certain funeral rites unknown to the western natives ; whilst circumcision is still further limited to the northern and southern tribes and to some intermediate ones. According to this view the western natives will represent the most primitive and simple form of the Australian stock in the south and east. This stock has been intermixed more or less with fresh comers, who must have proceeded from the north, introducing new tribal and other customs. Before the advent, however, of the northern tribes, the whole continent was doubtless fully occupied. Hence the southward movement which seems to have taken place had probably two directions, one across the continent to the head of the Great Bight, thence spreading east and west along the coast ; and the other along the north and eastern shores, and gradually spreading over the eastern portion of the continent. This view agrees well with that expressed by Mr. Eyre, who, however, thinks that the continent was first peopled on the north-west coast, and apparently from some other source. There does not, however, seem to be any necessity to derive the aborigines of Australia from any other area. Representing the primitive stock of mankind, they are the most likely to occupy their original habitat, which may, however, at one time have been much more extensive in its geographical range, embracing much, if not all, of the islands now occupied by the so-called Malay tribes, and extending much further both east and west.

Language.—Before closing this paper, it is advisable to see how far the conclusions already arrived at are affected by the distribution of languages on the Australian continent. Little need be said on this subject, as not much can be added to what was written long ago by Sir George Grey and Mr. Eyre. Both of these writers give reasons for believing that but one language, divided into various dialects, is found throughout the whole continent.* The objections to this opinion are of not much weight. The fact that neighbouring tribes often have very dissimilar vocabularies is accounted for on the principle that the Australian dialects, like all primitive languages, abound in synonymes, many of which, as Sir George Grey remarks, are for a time altogether local (ii, p. 208), or some of which, I would add, may gradually drop out of use by one tribe and yet be retained by another. Mr. Eyre has referred to the curious circumstance that distant tribes often agree better in language than those near together (ii, p. 393). This is explainable on the assumption that the intermediate kindred tribes have been displaced by others from a distance speaking dialects which time has made wholly different. There is, however, usually not nearly so much difference between the Australian dialects as is commonly supposed. Natives of distant tribes, no doubt, often have great difficulty in understanding each other. With care, however, this difficulty not unfrequently disappears. Sir George Grey says that wherever he went, in the southern parts of the continent, he he could soon understand the natives, and this apparently, although his guides thought the fresh dialects quite different from their own (i, p. 365). Sir Thomas Mitchell states a fact which throws some light on this subject. He unsuccessfully attempted to hold communication with the natives on the Gwydir, but one of his companions obtained a vocabulary, which showed that their language was nearly the same as that of the aborigines at Wallamoul (on the Cockburn River); the only difference being the addition of *na* to each noun, as '*namil*' for '*mil*,' the eye, &c.* An analogous case is mentioned by Commander Stokes, who says that in the neighbourhood of Port Phillip native names end in *ng*, at King George's Sound in *up*, and eastward near Gipp's Land in *n*. (i, p. 291). To any one not acquainted with the fact, such peculiarities would lead to the belief that the dialects presenting them are different languages.

That distant dialects which appear to be almost unconnected may really be fundamentally the same is shown by an incident related by Dr. Lang. He says that "when the Rev. Mr. Schmidt of the German Mission to the aborigines of Moreton Bay, was on his journey to the Bunga-Bunga country, the escort of aborigines who accompanied him consisted of natives of five different tribes, of whom those living at the greatest distances from each other could hold no communication together, except through the natives of the intermediate tribes (p. 321). This quite agrees with the inquiries of philologists, and I may say that a comparison made by myself of a western Australian vocabulary with that of the Queensland Kamilaroi dialect shows that many

* See Grey, ii, p. 208 et seq. Eyre, ii, p. 393.

† *Three Explorations*, etc., i, p. 109.

of their words are the same. The agreement, however, is not merely verbal. Mr. Ridley, a great authority on this subject, says that in all the dialects examined, although the vocabularies may much differ, "the same structure of verbs, nouns and pronouns, ample modifications expressing exactly minute differences of thought, are found."*

Mr. Ridley points out a philological peculiarity which may serve in some measure as a proof of the unity of the Australian tribes. He says that many of them are named from their negative or affirmative particle, and he instances the Queensland dialect, the Kamilaroi, as being thus entitled.† So, also, Mr. Earle, when describing the tribes of the Coburg Peninsula, on the west side of the Gulf of Carpentaria, says that they are "distinguished among each other by the term which in the particular dialect of each designates the monosyllable 'No.'" (p. 218.)

We have here a confirmation of the conclusion arrived at from other data of a special connection between the aborigines of the north and east. The inquiry made by Sir George Grey into the distribution of dialects among the southern natives also confirms in great measure the conclusions already stated as to special tribal affinities. Thus, in a letter written to Lord Stanley in 1845, he divides the language spoken in South Australia, from Perth to Port Phillip, between 115 and 145 deg., into five principal dialects, which "from their radical and grammatical resemblance," would seem to have had a common origin. In illustration of a map he gives, Sir George Grey says "the people speaking the first dialect appear to have extended themselves along the coast line from the northward and westward. Those speaking the third dialect appear to have come from the northward along Lake Torrens and Spencer's Gulf, and to have spread themselves to the westward until they met the people speaking the first dialect, and from the amalgamation of the two the second dialect appears to have sprung. The people speaking the fourth dialect appear to have come from the northward, down the river Darling and its tributaries, and from thence down the Murray, until they were met by those who spoke the third and fifth dialects. Those who speak the fifth dialect seem to have come along the coast from the eastward, as far as Lake Albert and Lake Alexandrina, and from thence to have spread up the river Murray, until they were met by the other tribes who were coming from the northward." Sir George Grey adds that "those tribes who have spread along the coast-line appear to have migrated with the greatest rapidity, or, at all events to have occupied the greatest extent of country."‡ This is quite consistent with the inference I have made from other data, that the Australian continent was at one time occupied throughout by tribes intimately allied; some of those in the south being afterwards, however, displaced by tribes migrating from the north in two streams; one passing through the centre of the continent, and the other along the eastern coast, spreading, however, towards the centre, and reaching, as Mr. Eyre supposes, Fort Bourke, on the Darling. As a slight confirmation of this opinion it may be

* Lang, p. 383.

† Lang, pp. 385, 438.

‡ *Journ. of the Roy. Geog. Soc.*, vol. xv. (1845), p. 365.

added that the natives, in various localities throughout the continent, view those further to the north with dread as very powerful sorcerers, a feeling which has arisen doubtless from their aggressive power.

Dr. ROBERT PEEL gave a description of Kangaroo Island, where there lived, in a state of gross immorality, the descendants of a Devonshire convict and an aboriginal woman, numbering ten in family. Dr. Peel came in contact with the eldest girl, who was living with the natives, and had had several children by an aborigine. They, as well as their mother, were expert as liars and thieves. The girl died within two or three days after admission to hospital. She alleged that she had been always brought up as a lady ; but her real life had been that of a shepherdess who was exposed to the inclemency of the weather. The Government Instructor at Port Macleay gave all her history, and showed that the family were more degraded than other aborigines. The statement of her previous education was wholly untrue. Although half-castes are widely distributed, it was remarkable that he (Dr. Peel) knew of no half-caste who had been a convicted thief. Some of the family of this girl are doing well. In North Australia, the natives were perfectly naked ; but they were able to steal hatchets, axes, string, iron, etc., by covering the object with earth, trampling it down, and by night removing it. The natives of the Adelaide River circumcise, do not extract front teeth, but they perforate the septum of the nose. Their spears are of various sizes. As they do not possess knives, they use shell and flint. The dead are buried in a grave due east and west, covered with paper-bark wicker-work or mangrove saplings. The graves are respected by the aborigines, and the strangers who molest them are killed. In North Australia, the boomerang does not exist, although the throwing-stick is frequently used. Women are kept in separate camps ; the huts are in the form of bee-hives, and are sometimes composed of merely one sheet of bark. Cannibalism is not known. The natives have no religion, but believe in transmigration, and have a dread of spirits ; they crave for animal food immediately before death ; communicate intelligence rapidly from camp to camp ; are expert swimmers, and dive well. In Northern Australia, the author did not see any half-castes. A vocabulary of the language had been compiled by the late Mr. Bennett. Many of the tribes are extinct. Syphilis is unknown ; but there were many cases of scrofula and small-pox. At Port Darwin, lat. 12°28'25 S., long. 130°52'46 E., *pura-pura* was the native name for small-pox. One case of lupus had been observed. In another case, a yam-stick had been thrust into the eye, causing complete disorganisation of the organ, apparently without pain. The natives have great horror of the knife in surgical operations. Round one of the graves, which was due east and west, there were seven seats of stone, and in front of each a pile of shell-fish. Every person in camp had a separate fire, made in a hole in the ground.

Dr. PEEL further described some skulls of Aborigines and half-castes, that he had presented to the Society's Museum.

The discussion on the above two communications having been invited,

Dr. CARTER BLAKE pointed out that the Australian Aborigines certainly differed in the form of the skull extremely *inter se*. We had *a* the well known tectocephalic skull, which Ecker had described, and which was generally associated with the idea of the Australian skull; *b* the skulls from Moreton Bay and Queensland, which Professor Huxley had very well described; *c* two skulls of undoubted Australians, in the Society's museum, presented by Mr. H. G. Atkinson, and of which there was no reason to doubt the authenticity. Now if Dr. Peel's remarkable brachycephalous skull, which he found in the gutter of the hospital, was really that of a native, we have a fourth type. And none of these types agreed with each other. But anyhow the facts he had laid before them were of the highest value. The hybrid skull he exhibited was very interesting, as in the jaw proportions it was (although very young), of marked Australian affinities, which, however, were absent in the vertex, which was as well formed and as oval as that of any European.

Mr. A. L. LEWIS stated that circumcision was practised in Yorke's Peninsula, South Australia, as he had a knife made of a piece of glass fixed in a stick, which had been used for that purpose, and had been sent to him with other implements from that district by a friend who, had resided there many years, and who had also informed him that wimmeras and spears were not used there.

Mr. BENDIR, Dr. KING, Mr. DENDY, Mr. PRICE, Mr. PARNELL, and others also joined in the discussion.

The chairman having announced the papers for December 6th, the meeting adjourned.

DECEMBER 6TH, 1870.

DR. BEDDOE, PRESIDENT, IN THE CHAIR.

THE minutes were confirmed.

John Colman, Esq., B.A., of Kabenda, West Africa, and William Wray, Esq., Burton Stather, near Brigg, Lincolnshire, were elected Fellows.

Thanks were voted for the list of presents, viz.:

FOR THE LIBRARY.

From the AUTHOR—The Peoples of Transylvania, by Dr. R. S. Charnock.

From the SOCIETY—Proceedings of the Royal Geographical Society, vol. xiv, No. 5.

From the EDITOR—The Food Journal, vol. i, No. 11.

From the EDITOR—Nature, to date.

From the GOVERNMENT OF VICTORIA—Patents and Patentees, from 1854 to 1866; Indexes for 1867-8; Abstracts of Specifications of Patents relating to the Preservation of Food, etc. By W. H. Archer, Registrar-General of Victoria.

Mr. W. R. COOPER exhibited and described some Græco-Egyptian Terra-Cotta figures, from the Hay Collection. He said: In soliciting permission to bring before your notice some very curious examples of

Græco-Egyptian art, I must premise that I do so less as an expositor than an exhibitor ; and this cannot well be otherwise when you are told that I have hitherto devoted no time to the study of anthropology ; and that the late Mr. Hay, from whose splendid collection these terra-cottas are taken, preserved few or no memoranda or data respecting the various objects which he acquired during a residence of more than five years in the heart of Ancient Egypt. The first of these figures is a small statuette, about three inches high, in hard whitish clay, and it represents the principal part of a male torso in a very singular and distorted position. As you will observe, the whole object is almost a fragment. The spine is laterally curved to the right, the chest and abdomen are contracted, the arm-pits and shoulders are unequal and elevated. From the mutilated condition of the statue, it is difficult to decide whether there ever were arms and hands attached to it ; but, from the smoothness of the work at the scapulæ, I incline to think that these members never were executed. The thighs are short, deformed, and are bent outward and apart, in an attitude suggesting an obscene motive. The remainder of the lower extremities, from the middle of the thighs, together with the virile organ have been broken off. On the left shoulder is thrown a cloth, evidently a subsequent addition while the clay was wet, as a portion of this covering has been accidentally detached. But the most extraordinary peculiarity about this singular object is the form of the head and cranium. This is unusually large, and hangs over the right shoulder, and the features resemble, as far as they alone are concerned, what, I believe, is denominated the Mongolian type. The lips are small and thick ; the eyes are oblique ; the nose is small, recurved, and with wide nostrils ; the chin is small and receding ; the zygomatic bones are high ; and the angles of the jaw square and heavy ; the ears are placed far back, and almost in a line with the nostrils ; the occipital, cerebral, and adjacent parietes, are prolonged and extended in a most extraordinary degree, so that the whole of the hinder part of the skull, which is here excessively enlarged, resembles a kind of hydrocephaloid, or rather encephaloid, tumour, which, resting upon the shoulders and the back of the neck, almost obliterates the cervical column. The summit, or crown, of this peculiar malformation is flat, and, indeed, so flat as to appear to be the result of artificial pressure. The whole of the skull and face is naked, and, together with the rest of the body, possess no indications of hair. The features are in *unison*, if the expression may be allowed, with the singular distortion of the head, and, from the vraisemblance of the entire figure, and the contour alike of bones and muscle, it is almost evident that this abnormal statuette has been modelled from life. The second object from the Hay Collection is one offering less marked ethnological peculiarities, and I will therefore not detain you by dwelling upon them in detail. It is, as you will readily observe, only a fragment, being simply a semi-Nubian head, roughly but characteristically modelled in a hard red clay ; the eyes, nose, mouth, and ears, are small, the forehead is prominent and wrinkled, and the expression of the features is that of idiotic satisfaction, the temporal bones are narrow, the apex

of the head is flattened, and the occiput is high, large, and round. Like the preceding example the whole of the skull is destitute of hair, and there is little doubt that this specimen of Græco-Egyptian fictile statuary is intended to represent an Ethiopian baby, and has very probably formed a part of one of those unseemly terra cotta phallic groups so common in the period of the later Ptolemaic art.

A paper was read by Mr. A. L. LEWIS on

The Peoples inhabiting the British Isles.

It may be well that I should state in the first instance, that this paper does not profess to be a complete review of the great subject on which it treats. It is simply a collection of random thoughts on what I may call semi-detached points, thrown together in the form of a paper for a particular purpose. The contingency which it was intended to meet did not, however, occur, and I should not have read the paper in its present form at all but for the requests of some of our friends around me. I mention this, however, merely as explaining, not as excusing, its deficiencies. Our object here is the discovery of truth, and if, as is most likely, you find in this paper anything which seems erroneous, I hope you will assail it without mercy.

The subject to which I have ventured to draw your attention is very difficult, not only from the complicated nature of the facts, but from the irresistible disposition to import into the consideration of it prejudices of religion, of politics, and of that which to a great extent includes these, of race. At a time, however, when the subject is attracting so much attention, and when one, who is generally considered as a high authority upon all such questions, is *reported* to have stated for the edification of the public, that "when history first makes known the Celtic language to us it is in the mouths of a people physically identical with the *Germans* and the *Slavonians*,"* I think it may be desirable that all who have given the subject any attention should come forward and state their views upon it, provided, of course, that they can adduce facts in support of such views.

Without quoting chapter and verse in support of all my conclusions, which, as they have been gradually formed from personal observation, and from a study of numerous and conflicting writings, I might find it difficult to do, I will state, in the first place, that there appear to me to be three leading types, or races, in Britain at the present period—two Celtic and one Teutonic. These are:—

1. A race possessing a long skull, and dark brown, or sometimes black, hair, which distinguish it from the Teutonic type, but having most frequently grey, and sometimes even blue eyes. This type, which I am disposed to consider as the primeval stock, and which is decidedly Celtic, has, I believe, been called Kymric, and, although I do not think the designation a happy one, I will, for the present adopt it.

2. A race possessing a skull broader than the first, brown or black

* *Pall Mall Gazette* (evening), March 14, 1870.

hair and eyes, and a darker complexion. The hair is often not so dark as that of the first type, but both, more especially the first, frequently exhibit a peculiar form of cheek-bone. This second type, which is undoubtedly Celtic, and is commonly called Iberian, is frequently considered to be the aboriginal stock, and to be allied, some say with the Australians, others with the Esquimaux. Without pretending to say positively that any of these views are incorrect, I may state that I believe this type to be second, in point of time, to the Kymric, because of the indications of tradition to that effect; because Dr. Thurnam and others have shown us that the long skulls, in Wiltshire at all events, preceded the broad skulls, which some consider Teutonic, but which I believe to be Iberian; and because the dark-eyed type is found in largest proportion in the southern half of the island, which would seem to indicate for it an arrival later than the Kymric.

3. The third type is one of which we hear an immense deal, but of which, in its pure form, we see comparatively little. I mean the round-headed, flaxen-haired, blue or light grey-eyed Teuton; who, whether German or Scandinavian, presents—so far as he is Teutonic at all—the same characteristics, and who is, on the whole, the last-come inhabitant of these islands; for the Norman conquest, and later immigrations, have only brought us further instalments of one or other of these types.

And here I may remark that it is probable that the so-called Saxon invaders of Britain were less Teutonic than the present inhabitants of Germany; because it is affirmed by ancient writers that the Celts had at one time extensive settlements beyond the Rhine, and it is probable that, as the increase of population on the shores of the Baltic threw increasing swarms of invaders upon Gaul, Britain, and Italy, those lying nearest to these countries, *i. e.*, those who were most likely to have an infusion of Celtic blood, would be the ones who, by pressure in the rear, would be forced to precipitate themselves upon them.

On this account there is much reason to believe in a considerable admixture of Celtic as well as Slavonic blood in South Germany, while tradition and archæology so clearly show a Celtic influence in Scandinavia as to make it a fair inference that wherever the Scandinavian differs from the Teuton it is in a Celtic direction.

In this enumeration of types many apparent omissions will probably strike you. You will have observed that I have omitted all reference to the fabricators of the flint implements of the drift, and I have done this because, between them and our own undoubted ancestors is a great gulf, which I for one believe will never be filled up. You will have observed that I have made no mention of red hair and complexion, and I have not done so because I believe them to be the result of a cross between the Iberian and Kymric, and, perhaps, the Iberian and Teutonic types. You will also have observed that I have made no reference to stature; and my reason for not doing this is, that stature strikes me as being affected rather by local and other circumstances than by race, so far at least as the area now under our

consideration is concerned, a conclusion in which, as in those I have previously stated, I have been much influenced by a consideration of the valuable statistics published by Dr. Beddoe in our Memoirs.

Lastly, you will have observed that I have spoken of three distinct types, whereas we have *apparently* every possible combination of them. I say *apparently*, for there seems to me much reason to doubt whether these combinations can or do maintain themselves as separate types, not because they become extinct for want of issue, but because their issue has a continual tendency to revert to one or other of the ancestral types, so that the exceedingly numerous instances that we see around us may not be so much due to a real amalgamation of our three races as to a continual occurrence of mixed marriages, owing to their contiguity. Thus we continually find, that where the parents are of different types, some children resemble one and some the other, so that, although all may have a certain occasional "family likeness," mentally and physically, the different types are propagated in the same family, the only genuine cross being the red-haired type, concerning which it may also be doubtful whether it can or does long maintain a separate continued existence. Had it indeed been otherwise it would seem impossible, that after all the mixtures of the past two thousand years, any varying types should be found at all in Britain, except in its most remote corners, or except such as might be clearly due to some recent and comparatively trivial importation. At the same time it is probable that a mixture of races may leave some result behind it, even where one of the races seems entirely to have absorbed the other, and, if so, such results may continue long after the source from which they sprang has been buried in oblivion.

Having spoken of these three types as inhabiting Great Britain, I must now draw your attention to a fourth, a modification of the Iberian, which is principally found in Ireland, and has been so uniformly treated as the typical Celt, by that class of newspaper writers described by the *Saturday Review* as "young lions," or "tail-lashers," that a large section of the public has come to regard the words Irish and Celtic as synonymous. It is not, however, to Ireland, but to Britain and to Brittany that we are to look for the typical Celt, whether Kymric or Iberian; and between even the Welshman and the Irishman there is a want of sympathy, to say the least of it, fully equal to that which exists between either of these and the most Teutonic Briton. There is also a physical difference between the Iberian of Great Britain and the Iberian of Ireland; the former has a broader skull and a broader chest, and, in short, wherever the Irishman differs, whether mentally or physically, as differ he unquestionably does, from the Iberian of Great Britain, it is in an African direction—a fact which goes far to support such of the Irish traditions as indicate a lengthened residence of the progenitors of the race in Northern Africa.

Dismissing this fourth type, or variation, with these few remarks, I now come to the consideration of a few of the mental characteristics of the three British types, which has been rendered all the more necessary by the extraordinary views which have been propagated,

mainly by newspaper writers of the class before mentioned. Those gentlemen have, in an unlucky hour, got hold of that most meaningless word, "Anglo-Saxon," and have argued thus:—All Englishman are Anglo-Saxons; the English people is the best and greatest in the world; therefore all the characteristics which have made it so must be Anglo-Saxon; and because those characteristics are Anglo-Saxon all Englishmen must be Anglo-Saxons. Proceeding further they have passed by at least four Englishmen who do not combine blue or blue-grey eyes and flaxen hair, if, indeed, they possess either, and have seized upon the fifth, who may exhibit such a combination, and having, so to speak, set him up on a column of leaded type as the Anglo-Saxon *par excellence*, they ascribe to him, if not the sole proprietorship of, at least an overwhelming superiority in the following qualifications and virtues, besides others too numerous to be mentioned on the present occasion.

1. Chastity.
2. Aptness for a sea life and for colonisation.
3. Good faith and honesty, and respect for human life.
4. Love of freedom.

Chastity.—The best test that we can apply on this point will be found in the statistics of illegitimacy, although the Registrar-General says (1868), "A truer method of measuring the degrees of immorality existing in the different counties consists in the comparison of the illegitimate births with the number of unmarried women at childbearing ages, a test which can only be made by means of the results of the numeration of the number of spinsters and widows living at different ages obtained by the census." Assuming even that the Registrar is right in this, it may be a matter of doubt how far the statistics he would be likely to get as to ladies' ages at the census would be reliable, and we may, I think, rest satisfied with such figures as we have, and the rather that they point unanimously in one direction.

In 1868 the average rate of illegitimate births registered in England and Wales was 5·9 per cent, but the real rate was believed to be a little higher, the larger towns affording facilities for disguising the truth in such cases; London, for instance, giving only 4·2 per cent, and the metropolitan counties still less. (See Table next page.)

Taking 6 per cent as the average, I have extracted from the returns the counties giving only 5 per cent and less, excepting London and the metropolitan counties, and those giving 7 per cent and more, of illegitimate births, and have taken from Dr. Beddoe's statistics the percentage of dark eyes and hair prevailing in each. Taking first the more virtuous counties, Kent, Rutland, and Hampshire, we find that dark eyes abound in them in unusual numbers, and though we have no statistics for Monmouth and Warwick, I believe dark eyes are tolerably numerous in them too. On going to the other end of the list we find that, on the whole, both eyes and hair become lighter as the rate of illegitimacy increases; Teutonic Lincoln, which is 2 per cent. above the general average, being, however, 2 per cent below Teutonic Norfolk, and nearly 3 per cent below Cumberland, where a very small proportion of dark eyes, combined with a very large pro-

	Rate per cent. of illegitimate births.	Percentage of persons having hazel, brown, or black eyes.*	Percentage of persons having brown or black hair.*
Kent (ex London)	4·7.....	44.....	90
Rutland	4·8.....	49.....	81†
Hampshire	4·9.....	50.....	67
Monmouth	4·8.....	No statistics.....	
Warwick	5·0.....	„	
England and Wales, average ...	5·9.....	37·5	73·5
Suffolk	7·1.....	No statistics.....	
Northumberland	7·4.....	27.....	74‡
York (E. Riding and City)	7·5.....	No statistics.....	
Bedford	7·8.....	42.....	80
North Wales	7·9.....	55.....	74§
Lincoln.....	7·9.....	29.....	46
Nottingham	8·0	37.....	76
Hereford	8·4.....	No statistics.....	
York (N. Riding)	8·8.....	38.....	63
Shropshire	9·6.....	39...No statistics.	
Norfolk.....	9·9.....	31.....	56
Westmorland	10·0.....	No statistics.....	
Cumberland	10·7.....	29.....	80
Scotland, average	9·7|| .....	24·5	70·5

portion of dark hair, marks a preponderance of the Kymric type, which type, however, we also find in Northumberland, with a comparatively low average of illegitimacy. On the whole, however, and bearing in mind that the statistics respecting eyes and hair are founded on numbers too small to be absolutely certain, we see that they tend to show that while the Teuton slightly outstrips the Kymro in the matter of illegitimacy (Cumberland, where, however, a Scandinavian element is supposed to exist, excepted), both Teutons and Kymros are far more numerous contributors to illegitimate births than the Iberians. I have some of the figures for 1865, which show no difference except in being somewhat higher all round.

In Scotland the average illegitimate rate for 1867 was 9·7; and in Scotland, while the average colour of hair is but slightly lighter than that of England, the average number of dark-eyed persons is as 1 to 4 instead of 1 to 3, as in England. The following list of towns (in order of population) shows that, Leith excepted, the towns on the eastern, or Teutonic, coast are the chief offenders:—

Glasgow.....	9·7	Paisley	8·2
Edinburgh	10·2	Greenock	6·0
Dundee	11·2	Leith	6·5
Aberdeen	14·0	Perth	9·8

(Average rate of Scotch towns..... 9·5).

* The figures in these columns are computed from Dr. Beddoe's valuable statistics, published in the third volume of *Memoirs of the Anthropological Society of London*.

† Dr. Beddoe's figures, taken from Rutland and Leicester. Leicester gives 6·9 illegitimate births.

‡ Based on very small numbers.

§ South Wales gives only 6·3 per cent., and only 36 per cent. of dark eyes—this number is probably too low; and that for North Wales (55) too high.

|| Insular, 5·3; mainland and rural, 10·2; town, 9·5.

Seven Scotch counties give above 12 per cent. ; the average rate for the "mainland and rural" being 10·2 per cent. These counties are Elgin, Banff, Dumfries, Aberdeen, Kincardine, Kirkcudbright, and Wigton, all east and north-east except the two last, which are south ; and Mr. Cleghorn has told us (*Anthropological Society's Memoirs*, vol. iii), that in the eastern, or Teutonic, districts the average rate for 10 years (1855-64) was about 10 per cent., while in the western districts it was about 6 per cent. In Scotland, therefore, where the line between Celt and Teuton is more clearly defined than in England, these figures show conclusively that it is not the Celt who contributes most to the illegitimate birth-rate.

The rates for foreign countries are as follows :—

Celtic (chiefly).

*Spain, 1864†	...	...	...	5·5 per cent.
*Italy, 1865 ...	...	...	...	5·1 "
Belgium, 1865	...	...	...	7·0 "
France, 1864	...	...	...	7·5 "

Teutonic and Scandinavian.

Holland, 1864	...	...	...	4·1 per cent.
Prussia, 1864	...	...	...	8·1 "
Norway, 1860	...	...	...	8·4 "
Sweden, 1864	...	...	...	9·5 "
Austria, 1864	...	...	...	10·9 "
Wurtemberg, 1864	...	...	...	16·4 "
Bavaria, 1862	...	...	...	22·5 "

On this point the Registrar-General says (1868), "In some countries the rate is considerably higher than in England, but many circumstances have to be taken into consideration in making any comparison in this direction. In France the rates are comparatively low ; in Austria the rate is high ; while in Wurtemberg and Bavaria it is excessively high. In some of the European states marriage is prohibited until the parties can show that they have the means of maintaining their offspring, and concubinage is often the result."‡ Whatever circumstances the Registrar, who does not look at the matter from a racial standpoint, may find to consider in estimating the value of these figures, they all point to the same result ; and that result is in no way favourable to the claim of the Teuton to superior chastity.

Aptness for Sea Life and for Colonisation.—The first European maritime people that history introduces us to, after the Greeks and Latins, is the Celtic Veneti of Brittany, and the Bretons of the present day are hardly inferior, as sailors, to any people in the world. The next great maritime power, second to Rome, appears to have been Britain, under Carausius, nor was it till many years after his death that the Teutonic and Scandinavian (principally the Scandinavian), peoples developed their sea-faring propensities. Soon after the dis-

* Believed to be too low from incorrect registration.

† These years are not selected specially, but are the only ones I have at hand. The variation from year to year is not likely to be large.

‡ This is practically the case with our own upper and middle classes.

covery of North America by the Norsemen, we find a Welsh prince, Madoc, discovering some country, which is believed to be part of South or Central America, and returning thither with a colony. Whether this expedition landed in safety is not known, but the numerous legends respecting white Indians, etc., current in those countries at the time of the Spanish discovery, may lead us to infer that it did, and we, who have so often discussed the question whether the white race can support itself in America, are not likely to stumble at the fact that no descendants of Madoc's small colony have yet been found there. The great discoveries of the Tudor period were made by Spaniards, Portuguese, Italians, and Britons. Spain was the principal naval power till overcome by Britain; the Scandinavian having, as regards marine exploits, apparently died a natural death from exhaustion,* and the Teutons, except the Hanse Towns, whose trade was mostly coasting, being only represented by the Dutch, as, indeed, for all practical purposes, is still the case. Dutchmen are not exactly Germans however, and it might throw much light on our subject if we could ascertain the reason of the difference between them. Seeing, therefore, that with the exception of the Saxons for about two centuries, (the Hanse Towns, which were not exclusively Teutonic), and the Dutch for the last three centuries, all the great European naval powers have been either Celtic, or, like Britain and Scandinavia, of mixed blood, I cannot understand how the Teuton can claim to have demonstrated his superiority at sea as compared with the Celt.

With respect to colonisation, Mr. Pike has well observed that the German does not colonise, but emigrates to the colonies of other nations.

Good Faith, Honesty, and Respect for Life.—Without inquiring too minutely as to whether the average Englishman is really more honest and humane than his neighbours, I propose to examine the claims of the Teuton in those respects. Almost the first thing we hear of the Teuton in Britain is, that Hengist murdered three hundred British nobles at a banquet to which he had invited them for the purpose, and though many doubt the existence of Hengist, and therefore the truth of this narrative, it is well known that the custom of pledging healths arose as a guarantee against such malpractices, which, nevertheless, were continually resorted to. The massacre of the monks of Bangor, by Edelfrid of Northumbria; of Edward by Elfrida, at Corfe Castle; and of the Danes in 1002, are familiar to all, while less known, but very frequent instances occur throughout Teutonic history, such as the murder of thirty Slavonic chiefs by Gero, a Saxon count in the 10th century, who had invited them to an entertainment and made them drunk for the purpose; and the Newgate Calendar does not record more crimes of all kinds than do the chronicles of the Saxon domination in Britain. But it is doubtless on the history of Germany, and especially of the kingdom of Prussia, that the admirer of the Teuton will rest his claim to superior honesty, good faith, and humanity. I wish him joy of his undertaking.

* The Celtic influence in Scandinavia was doubtless much stronger when the Norsemen ruled there, a thousand years ago, than it is now.

	MALAGASY.	NAMAQUA.
<i>Clean</i>	mainou	ganu
<i>Cool</i>	nara	kara
<i>Eye</i>	mass	mus
<i>Fan</i>	raraf	zarip
<i>Foot</i>	pe	veis

So far as grammatical structure is concerned, it may be thought that the click language can have no affinity with the Malagasy. Features in common of this character are, however, not altogether wanting, although from the comparative simplicity of the *Namaqua* they cannot be numerous. Thus, although the latter differs from the Malagasy in the possession of signs of gender, yet we find that in both languages, when the masculine or feminine gender is required to be particularly shown, words denoting male or female are added to the noun, in the one case as an affix, in the other as a prefix. Both languages, moreover, possess a common gender which includes all nouns not specifically separated from the class to which they belong. These become defined in Namaqua by the addition of the sign of gender, and in Malagasy by adding the masculine or feminine adjective. Mr. Tindall says that "the only law which the Namaqua appears to follow in the imposition of gender upon things inanimate is that of euphony, and in some cases, that which is imposed by a certain distant resemblance or analogy to the natural distinctions of the two sexes." In the treatment of Malagasy nouns, which are said to belong to the *neuter* gender, the latter plan is adopted. These nouns become masculine or feminine when used figuratively, and the rule which governs the ascription of genders is that "when the noun denotes firmness, strength, or power, it is often expressed in the masculine gender, but when it denotes softness or productiveness it is expressed in the feminine gender." Malagasy and Namaqua nouns agree, moreover, in the possession of a dual number, whilst they differ in the use by the latter alone of case terminations. It is possible, however, that the Malagasy particle *ra*, which is used to give distinction to the names of persons, may be connected with the particle *ra* which in Namaqua is the sign of the dual of feminine and common nouns. Such a double use as this is seen in the Zulu word *kazi*, which is employed, not only as the feminine sign of gender, but also to indicate an increase of quality, as *ra* is used in the same language to denote a diminution of quality. The adjectives of Malagasy and Namaqua are equally wanting in the power of inflection. The pronouns, which are the most important words in relation to the grammatical structure of a language, offer certain analogies, although their development in Namaqua is far superior to what is found in Malagasy. Thus, in both languages the plural nominative and objective cases of the first personal pronoun possess the exclusive and inclusive forms. There would seem, moreover, to be a similarity in the roots of some of these pronouns. It is not difficult to connect the Malagasy *izy*, he, she, it, with the Namaqua *xêi*, the personal pronoun of the third person. In both, moreover, the objective case is distinguished by the use of the letter *a*, and the nominative plural

in Malagasy *izareo* is evidently related to the feminine dual of the Namaqua pronoun which is *neira*. A similar form is used also in the plural of the Malagasy second personal pronoun to that of the feminine dual of the same pronoun in Namaqua. Thus in the former it is *hinareo*, you, and in the latter *saro*. This initial *s*, like the Malagasy *iz*, does not here belong to the root. The various forms of the second personal pronoun in Namaqua differ from the dual and plural forms of the first personal pronoun only in their terminal syllables, and a similar phenomenon presents itself in Malagasy, where it is evident that *hianao*, thou, *anao*, thee, are connected with the exclusive *anay*, us. The inclusive form of the Malagasy personal pronoun "we" is *isikia* in the nominative and *antsikia* in the objective. Now, the Namaqua first personal pronoun in its nominative form taken inclusively has *sakum* and used exclusively *sikum*, these being undoubtedly formed from the same root as the Malagasy pronoun. In fact, Dumont d'Urville gives in his Malagasy vocabulary two words for "we"—*nesika* and *sissen*—which almost perfectly agree with words having the same meaning, *sike* and *sisi*, given in Tindall's Namaqua vocabulary. In its system of verbs there is little in the Namaqua to attach it to the Malagasy, except in the great number of forms the verb is capable of taking. Thus, besides the primitive, it possesses eight simple derivative forms, several of which may again be combined. The similarity of subsidiary parts of speech is not so important, but I would mention that the Malagasy conjunctions, *sy* and *raka*, if, with *ka*, and then, appear to be reproduced in the Namaqua *zi* and *ka*, if. When we remember the interchange which sometimes takes place between the letters *l* and *m*, we may find the Malagasy interjection *lozala*, in the Namaqua, *muzo*, and the first word of the exclamation *akory izao*, has great resemblance to the Namaqua *okha*! These Malagasy particles I have taken from Mr. Griffiths' Grammar, but others given by Dumont D'Urville also agree with the Namaqua. Such are the Malagasy *mou*, which, *si*, if, *i*, on, *ehe*, no, and *tsia*, never; Namaqua, *ma*, *isi* (whether), *ei*, *hê-e*, and *tazi*. Before ending this comparison, I would refer to certain words, the construction of which I have already mentioned as connecting the Malagasy with the Kafir dialects, and which may be used also in support of the affinity sought to be established between the Malagasy and the Hottentot dialects. These are the words having the prefix *ompi*, one of them being *ompitrouss*, a debtor. Now, in the Namaqua we find the word *Suruti-aup*, a debtor, which I have no doubt is the same as the Malagasy word. The prefix *ompi* and the affix *aup* (the latter being used in Namaqua for *men*) appear to have exactly the same sense, that of an active agent, and I have little doubt that they are derived from the same source, and if, as I imagine, the Kafir *um* is connected with these particles, we have in this an important point of affinity between all these languages.

But the grammatical affinity between the Malagasy and the Hottentot dialects is not so great as a comparison of vocabularies would lead us to expect. In fact they are not so precise as those which exist between the Malagasy and the Kafir dialects which possess fewer apparent verbal agreements. Probably this is to be accounted for by

the very early date at which the Hottentot family separated from the common stock, combined with the tendency which, owing to their grammatical simplicity, languages of this family have to preserve the roots of words unaltered. The Hottentot became a detached race most likely before either the Malagasy or the Kafir grammatical peculiarities were developed, and we may, therefore, perhaps see in the dialects spoken by that race a nearer approach to the form of the primitive speech of the stock, than either of the other languages exhibits. It is very probable, moreover, from the peculiar position occupied by the Hottentot in South Africa, that his language will be found to have a connection with the Kafir dialects, which would in itself furnish presumptive evidence of a still earlier contact with the Malagasy. Nor is the verbal affinity, at least, between the Hottentot and the Kafir dialects difficult to show. For instance, Doehne declares that the primitive roots of all Zulu words must have been verbs, and in the Hottentot dialects many primitive verb roots are still retained, several of which are evidently the same as Doehne's primitives. Such are Hottentot *be*, to go away, Zulu *ba*, to step forth; Hottentot *da*, to tread, Zulu *da*, to advance; Hottentot *va*, to slaughter, Zulu *fa*, to die; Hottentot *dâu*, to flow, Zulu *ta*, to pour; Hottentot *ha*, to come, Zulu *hla*, to happen; Hottentot *na*, to bite, Zulu *na*, to meet; Hottentot *zâ*, to feel, Zulu *za*, to feel. The Kafir auxiliary verb *ma*, to stand, is also to be found in Namaqua with the same signification. Other words which these languages have in common could be named, although they do not now appear to be numerous. The most important to this paper are those which show a general connection between the Malagasy, the Kafir, and the Hottentot languages. Such is the word for "money." This in Namaqua is *marî*, which Dr. Bleek derives from the English word, although Doehne derives it from the Hottentot *ma*, to give, and *ri*, the first personal pronoun, literally "give me," and finally "that which is given to me." This may be the true origin of the Hottentot term, but Doehne traces the analogous Zulu term, *imali*, to the Arabic, and there does not appear to be any reason why these words, which differ only in the change of *r* into *l* as required by the Zulu pronunciation, should be assigned different origins. In fact, we have the very same word in the Malagasy *arien*, money, the original form having, probably, wanted the letter which appears as the affix *n* in Malagasy and the prefix *m* in the Zulu and Hottentot dialects. Another Namaqua word, which appears to have a somewhat similar relation, is the verb *koba*, to speak, which contains the same elements as the Malagasy *kabar*, the name for the Madecasse public and other meetings for discussion. It is curious that the Arabs, according to Mr. Palgrave, use the word *khotbah* in relation to a public discourse; and this may, perhaps, enable us to identify the name given by the Basutos to their place of public assembly, which is called the *khotla*, with the Namaqua *koba*, to speak. Other words might be added; but I will refer only to the Kafir primitive *za*, to feel, which we have seen to be found also in the Namaqua, and which the Malagasy has preserved in the verb *mazapazapa*, to feel.

The comparison here made of the Malagasy with the South African languages is very slight ; but it is sufficient to show the existence of a connection between them, which extends to the dialect of the Hovas no less than to those of the other tribes of Madagascar. The greater grammatical affinity of Malagasy and Kafir dialects seems, however, to point to a more recent connection between these peoples than that furnished by the verbal agreement of the Namaqua. The grammatical affinities of the latter, however, derive importance from the connection between the Hottentot and the Kafir dialects. Probably, these languages were detached at different periods, the Hottentot appearing to stand to Malagasy in the relation of the Polynesian rather than of the Kafir dialects.

The almost universal relationship of the Madecasses, shewn from the preceding data, makes the question of their origin one of the most complicated that the anthropologist has to deal with. It might well be thought that the inhabitants of Madagascar were derived from the neighbouring continent. There are, however, several objections to this view. One, which has considerable weight, is, that the South African peoples, like the ancient Egyptians, have a great dislike to the sea ; they having, moreover, no knowledge whatever of navigation. A more important objection, however, arises from the distribution of peoples on the African continent itself, especially when taken in connection with their relation to other peoples on the eastern margin of the Indian Ocean. The Hottentots (including the allied Bosjesmans) belong, it can hardly be doubted, to the great East African Ethiopic stock ; bearing the same relation to some of the Kafir or Bechuana tribes as do the Hovas to the darker tribes of Madagascar. The Kafirs, and other members of the Ethiopic stock, show, moreover, in many of their physical characters, an affinity with the negro peoples, among whom we find, on the whole, the lowest type of man on the African continent. This type is, however, located in the extreme west, and yet, if we look for the lowest type of man absolutely, we find it in the Papuan aborigines of the Australian continent at the other side of the Indian Ocean, the Ethiopic peoples and those of Madagascar lying between the two. The Negro affinities of the Kafirs show that they cannot be an intruding people who have intervened between two branches of the primitive stock ; and, therefore, according to any hypothesis of the unity of man's origin, the peopling of Madagascar from the adjoining continent would require a double migration of peoples over that area—one of the primitive stock from east to west, the Negro being its final deposit ; and a reflex movement from west to east, reaching the Island of Madagascar, which we must suppose to have been passed over in the original movement.

There would not be this difficulty in peopling Madagascar from Australia or the Malay Archipelago, seeing that the most primitive peoples live on the margin of the Indian Ocean. There are, however, objections to this hypothesis equally strong. In the first place, most of these peoples, including the Malays themselves, have as great a dislike to the sea as have the South African peoples, and they are all,

apparently, nearly as ignorant of navigation. This assertion may be thought to be incorrect in relation to the Malays, as they are usually supposed to be a peculiarly maritime people. Sir Stamford Raffles, however, long since pointed out that this idea is erroneous, the so-called Malay sailors of the Archipelago being exclusively Javanese. The Javanese even cannot, with any certainty, be quoted as furnishing exception to the general rule, as they were so long under Hindu influence, and have been so much in contact with the Arabs, that their maritime taste may have been acquired. The same may be said of the enterprising Bugis of the Celebes. The notion of unintentional migration by means of an ocean current appears to me too wild a notion to be seriously entertained, even if there is such a westerly current as would be necessary for the supposed drifting of the progenitors of the Hovas from the Malay Archipelago. Moreover, their affinity with the other Madecasses would seem to furnish an insuperable objection to such an origin for the Hovas, unless a similar one be ascribed to the dark tribes also. Mr. Logan, who has had rare opportunities of judging of this question, points out another objection, which I have already had occasion to mention, although, perhaps, this would be removed if a continental origin for the Malay race could be established. He says that "the ideologic and glossarial analogies" between the Malagasy dialects and those of the Malay Archipelago, "are not confined to Java and Sumatra." The former are much more strong to the Formosan, Philippine, and Celebesian languages, and, to present all the Asianesian traits of both kinds, we have to go to Polynesia. The colony, therefore, must have traversed a large part of Asianesia to construct a language for Madagascar, and must, after all, have laid aside the great mass of its own vocables, and invented new ones." Mr. Logan, indeed, declares that the Hovas "are entirely African in their manners, customs, religion, government, arts, etc.," and that their very name even is found in South-Western Africa, in "Ovampo" and other words, as the Vazimba, supposed to be extinct, may be identified with the tribes of the Zambesi basin, one of whom is still called Mazimba.

Judging from the preceding data, the Madecasses are, in my opinion, more truly autochthonous than any other existing race, except, perhaps, the aborigines of Australia. This notion is perfectly consistent with all the facts that have been observed, even as to the Malay affinities of the Hovas. The physical characters of the Madecasses strongly confirm this view; since, without presenting the extreme peculiarities seen among African and Asianesian peoples, they yet possess certain features in common with them all. At the same time, I much doubt, judging from the descriptions of various travellers, whether the physical differences among the Madecasses themselves are, as a rule (whatever may be the case as to individuals), nearly so great as is generally supposed. At least, there is apparently no abrupt division between the light tribes on the one hand and the dark tribes on the other. But, further, we appear to have, in the physical characters of this people, a key to the solution of the difficult problem of the origination of a fair race from a dark one, which

is furnished by the hypothesis of the unity of man's origin. Among the Madecasses, if we may believe the reports of various travellers, every gradation of feature between that of the European and that of the Negroid type may be traced.

According to this view, then, Madagascar would be a very early and important centre of human origin, the only plausible objection being the ignorance of the Madecasses in all matters relating to navigation. In this respect they agree perfectly with the inhabitants of Eastern Africa, with the exception, however, of the Sakalaves, who, even in Drury's time, had large canoes, in which they appear to have made piratical expeditions to the Comoros Islands, although there is reason for doubting whether these canoes were due to their own invention. The difficulty arising from the absence of means of transport across the channel which divides Madagascar from the adjoining main land, or over the ocean which separates it from the Malay Archipelago, may, however, be removed. That there was at one time land communication between Madagascar and the Malay Archipelago is no longer doubtful. The *Lemuridæ* are found not only in Madagascar, but also on the continents of Africa and Asia, and as far east as Celebes in the Malay Archipelago; and Dr. Sclater has suggested the name "*Lemuria*" for a now submerged continent which he supposes to have at one time existed between these distant points. Mr. Wallace, also, speculates on the past existence of such a continental area, to account for the curious fact that Celebes possesses various animal forms "which show no relation to those of India or Australia, but rather to those of Africa." Judging from its natural products, Mr. Wallace says that Celebes must be one of the oldest parts of the Archipelago; and he adds that "it probably dates from a period not only anterior to that when Borneo, Java, and Sumatra, were separated from the continent, but from that still more remote epoch when the land that now constitutes these islands had not risen above the ocean." This appears to me to have a very remarkable bearing on the question of the spread of human races in the sub-Asiatic area. For, as I have already shown on the authority of Mr. Logan, that part of the Archipelago, in which an affinity of dialects with the Malagasy is the most strongly marked, includes Celebes, extending northwards to the Philippines. Thus, while the distribution of the mammalia requires, according to Mr. Wallace's view, the non-existence of Borneo, Java, and Sumatra, at the time when Celebes was united to Madagascar, exactly the same supposition is required to account for the peculiar distribution in the same region of the races of man. Celebes is within Mr. Wallace's Papuan continental area, and even supposing that its inhabitants are, as Mr. Wallace asserts, Malay, yet they may have retained through a gradual admixture with the aboriginal population the linguistic peculiarities of the latter. The distribution of the Papuan and Malay, or the dark and light races, in the Malay Archipelago may be thus explained in exact accordance with geographical requirements; as it is the *dark* race with which the Madecasses are the more nearly related, and which inhabits the area supposed to have been at one time connected with this

island and with the African continent itself, thus bringing all the dark races of the tropics into actual contact. Unless this be so, it is almost impossible to explain the position of the Malays between the Papuans and the allied tribes of Madagascar, while the subsequent rise of the area of which the large islands of Borneo, Java and Sumatra are probably remnants, furnished a connection between the Malays and the primitive dark race such as their affinity requires, or rather a mode by which this race, perhaps after the formation among them of a light people, could spread over a more northerly area than that which it had hitherto occupied.

I have elsewhere set out fully the data from which the former existence of a sub-Indian continental area, probably within the human period, may be established, and I will not enter further on the subject here. That Madagascar must have formed part of this continent, if it ever existed, cannot be doubted. This is required by the character of its fauna and flora, but even more by the racial affinities of its human inhabitants. Before ending this paper, I would refer to another curious point in this relation worthy of serious consideration. Whatever distinction there may be between the natural productions of Madagascar and Africa, there can be no doubt that the Madecasses have the domestic fowl, the fat-tailed sheep, and the humped ox, found also among the African peoples, the species being the same, and even the names by which they are known not differing. Moreover, the African peoples who possess these domestic animals are exactly those who are most nearly related to the Madecasses, and who resemble them in being pastoral peoples. I would suggest the probability, therefore, that we have in Madagascar itself the origin of this condition of life, and, as introductory to it, of the domestication of animals. Let us add to this, that the Madecasses excel, equally with the cognate African tribes, in the smelting and working of iron; and we see that they have all the chief elements of progress at their command, although they have not been favoured by other conditions required for their perfect operation. Taking these facts into consideration, we shall not be far wrong if we conclude that, as Australia, or it may be a more westerly area, was the place of man's *origin*, so Madagascar, or some spot not far distant from it and further to the east, was the seat of man's *primitive civilisation*.

Dr. CARTER BLAKE, complimenting Mr. Wake on the importance of his paper, said that the author apparently endeavoured, after demolishing the theory of the Malay affinities of the Madecasses, to prove three theories: first, that the Madecasses were identical with the Eastern African negroes; secondly, that they were identical with the Kafirs; and thirdly, that they were identical with the Hottentots, or with those most degraded examples of the Hottentot race, which were termed Bosjesmen. Now, he admitted that between the Hova skull and the skull of the Eastern African negro there existed little difference, but a resemblance which could be perceived distinctly after examination of the enormous series of Eastern negro skulls derived from Quiloa and Zanzibar. These negroes differed entirely from the negroes of the Gold Coast; and it was the generalisa-

tion of Professor Owen that had shown us that there existed two types, at least, in the Negro race. And he would further admit that the Kafir race and the Eastern African Negro shaded into each other by imperceptible tints. But, when we extend Mr. Wake's argument, and examine the characters of the Hottentot and the Bosjesman, we see indeed a very different type. It appeared to him that the population of Southern Africa might be divided into two great divisions: the one comprehending the Eastern Negro, the Kafir, the Hova, and others; the other comprising the Hottentot and the Bushman. Still, Mr. Wake's paper was undoubtedly of the greatest value.

DR. CHARNOCK wished to know whether the author of the paper had compared the grammar of the Malagasy with that of the Malay. From a comparison of the two, he was inclined to think that there was but little in common between them. Mr. Wake stated that the vocabulary of the Malagasy agreed to a considerable extent with that of the Malay. This might be accounted for by the fact that both had borrowed from the Arabic. The author of the paper also stated that the manners and customs of the Madecasses agreed with those of the Kafirs; but had this originated in ancient or in modern times. If in modern times, it amounted to nothing.

The following also took part in the discussion: Lieut. S. P. Oliver, R.A., Dr. Seemann, Mr. Walter Dendy, Mr. Allan, Mr. Mackenzie, and the Chairman.

The meeting then adjourned till Jan. 4th, 1870.

JANUARY 4, 1870.

DR. R. S. CHARNOCK, V.P., IN THE CHAIR.

THE minutes of the last meeting were confirmed.

Andrew Black, Esq., 23, Royal Crescent, Glasgow; John Morgan, Esq., 15, Burton Crescent; and Carl Alphonso Hoffmann, Esq., Elmfield, St. Julian's Road, Streatham, were elected Fellows.

Presents were announced as follows:—

FOR THE LIBRARY.

From the AUTHOR.—*Des Races Humaines, ou Eléments d'Ethnographie.* D'Omalus D'Halloy.

From the AUTHOR.—*Origines, Migrations, Philologie, et Antiquités*, parts 1 and 2. Le Duc du Rousillon.

From the SOCIETY.—*Bulletins de la Société Impériale des Naturalistes de Moscou*, No. 4, 1869.

From the COLLEGE.—*Bulletin of the Museum of Comparative Zoology at Harvard College*, Nos. 8—13.

From the BOSTON SOCIETY.—Address on the Centennial Anniversary of the birth of Humboldt. L. Agassiz.

From the AUTHOR.—*Observations on a Collection of Chalchihuitls from Mexico and Central America.* E. G. Squire, M.A.

From the AUTHOR.—Report upon Sea-dredging. L. Agassiz.

From the SOCIETY.—Proceedings of the Royal Society, No. 115.

From the CANADIAN INSTITUTE.—The Canadian Journal, No. 4.

From the EDITORS.—Nature; The Medical Press and Circular; Scientific Opinion.

From DR. RYAN TENISON.—British Medical Journal.

The CHAIRMAN announced that Mr. E. W. Brabrook and Mr. A. L. Lewis had been appointed Auditors of the Society's accounts for 1869.

A paper by Mr. L. OWEN PIKE, M.A., "On the Psychical Elements of Religion" was then read.

INTRODUCTION.—*Definition of Terms.*—What is Religion? This, I think, is a question which it is my duty to answer before I have any right to proceed further with the subject which I have undertaken to investigate. The professors of each individual faith sometimes brand as superstitions all the doctrines in which others differ from them, and regard themselves as the only believers in the true religion. It is hardly necessary to remark that were the teachings of any one sect adopted by the man of science in this sense, it would be impossible for him to propound such an inquiry as the present. But where does religion end and superstition begin for the impartial seeker after truth? Is it possible to draw any line with a hope that it will be generally accepted?

The best and the simplest method of dealing with the difficulty will, I think, be to accept the word "religion" in its widest sense, and to remember that the Latin *religio* meant not less superstition than what the orthodox of any creed would term "religion." By religion, then, I do not understand any particular form of any particular faith, nor any particular faith regarded as a whole. I use the word as a generic term, including not only all revelations or pretended revelations, but also the results of every attempt to deal with those hidden mysteries of which we can know nothing except through revelation, or, in other words, which the Laws of Mind will not permit us to solve for ourselves. Those results vary according to the mental constitution and the circumstances of each individual or nation; but to all alike—from the Fetichism of the lowest savage, to Buddhism, the highest form of a creed not dependent on revelation—I give the name of religion. To the myths which form the basis of the most beautiful ancient poems, to the Pantheon of Greek and Roman civilisation, to all the conclusions of metaphysical speculators, to the Pantheism of one school of philosophy, to the Atheism of another, and even to that Scepticism which believes itself the negation of faith, I give alike the name of religion, and I hope in the end to justify my definition.

Though, however, without intending any disrespect to any form of faith, I discard for scientific purposes the distinction between religion and superstition, I have found it necessary to make a two-fold division of religion, which (as I hope to show) naturally falls under two heads:

1. The religion in which both the intellect and the emotions play a part.

2. The religion in which only the intellect plays a part.

The former I place first as that which, in the history of all nations and all individuals, precedes the latter, and is accepted by the great majority of mankind. The latter has never in any age been accepted by more than a few persons who have commonly been misunderstood, who have sometimes misunderstood their own conclusions, and who have never made many converts to their opinions even when they have succeeded in founding a faith. The mental history of such men, however, is of such importance, and their influence upon the direction which religion has taken has been so great, that it would be unjustifiable to exclude their views while searching for the common elements of religion, and for the causes which predispose mankind to accept a revelation.

If it is necessary to give a definition of the term "religion," it is, perhaps, not less necessary to say what I mean by the term "psychical," and to justify its use.

The words "psychical" and "psychology" have the double advantage of being sufficiently precise and yet of implying no theory whatever—a rare and most valuable quality in a scientific term. The Greek word $\psi\upsilon\chi\acute{\eta}$ has a double meaning: (1.) the breath of life; (2.) the soul. And psychology is the science of that aggregate of phenomena which one school declares to be sufficiently explained, or susceptible of explanation by the laws of matter alone, but for which another school postulates the existence of spirit as a necessary cause. It is most fortunate that a word exists which is equally applicable to the views of both schools; it is still more fortunate that the word is of so extended a meaning as to be consistent with the rejection of all the dogmatic axioms of both schools alike. Psychology, in the sense which is not only justified but suggested by etymology, and in the sense in which I use it, is the science of the phenomena of animal life in action. This definition, I am aware, trespasses apparently on the domain of what is commonly called "physiology;" but no psychology is complete without physiology, and it may be added that physiology is but a part of psychology. The waste and repair of tissue are so inseparably connected with volition, with emotion, with sense, and with intellect, that it is impossible to understand either class of phenomena without a knowledge of the other. Psychology, then, may be considered the dynamics of breathing beings, all of which appear to be endowed with consciousness in a greater or less degree; and the psychical elements of religion are those elements, if they may be so-called, which are to be discovered in the animals displaying the phenomena of religion.

Having now attempted to explain the sense in which I use the terms "religion" and "psychical," I will make a few remarks concerning my use of the term element. It is a word which has seen many changes, and which may possibly see many more. When applied to visible matter, it no longer means earth, air, fire, or water; and far be it from me to suggest that some of the mental phenomena which in our time are considered elementary, may not one day be resolved into more simple constituent parts. Indeed, it is already allowed by psychologists of most schools that the faculty of discrimination, or the sense of difference, is the ultimate basis of all psychical phenomena. But,

although every state of feeling may be said to involve this sense of difference in one form or other, the fact still remains that there is a wide distinction between an emotion and an intellectual perception, and that we do not as yet know precisely what is the cause of that distinction. To an emotion, therefore, and to a simple intellectual law of association, I have ventured to give the name of element, though I am fully prepared to admit that the expression must be considered somewhat faulty. I can only plead in apology that I have sought for a better word in vain.

I trust, however, that the object of the present inquiry is now sufficiently plain, though I may, perhaps, render it still plainer by giving a definition of "the psychical elements of religion" in gross, instead of term by term. I mean by the phrase those simple faculties or simple laws in the constitution of breathing beings, which faculties or laws can be traced in all forms of religion, including superstition; and I divide religion into two classes, because I hope to show that to one kind of religion two or more psychical conditions are necessary, while the other is but the recognition of the one fundamental but simple law of consciousness.

PART I.—*The Elements of Popular Creeds.*—No people which has handed down a literature has omitted to hand down a creed; and in all the popular creeds which have been handed down to us there are certain points of resemblance. All make a certain appeal to the intellect; all make a certain appeal to the emotions. Every superstition proclaims that a person or persons must be propitiated, and lays down a definite form of propitiation. Gods are always endowed with powers, motives, and feelings like those of human beings in kind, though greater in degree. It would be useless to prostrate oneself to a God who could not see, to pray to a God who could not hear, to sacrifice to a God who found no sweetness in the savour of sacrifice, to thank a God who could not be gratified, or to make atonement to a God who could not be angry. Such as the man is, such in character, though greater, must be the conception of the God; and, though the form of his body or bodies has varied, it has always been supposed that, in the mental affections at least, God made man in his own image. Nor is any other conception possible, as the human intellect is at present constituted; for any attempt to conceive the divine nature differently ends in Atheism, in Pantheism, which is Atheism in disguise, in Scepticism, which doubts, though it does not deny, the existence of a divine Person, or in the utter negation of thought. The modern English Church, it is true, has declared God to be without body, parts, or passions, but does not, therefore, demand any intellectual assent to that proposition. It appeals not to the reason, but to the faith of the believer. It allows that God is a mystery beyond the grasp of man, and shrinks from the use of words which would profanely imply that He is in any respect like miserable human beings. But no form of prayer has yet been devised which does not tacitly assume that God listens to mankind as a great King listens to the petitions of his subjects. The weakness of the human intellect is a fact which

not even faith can disguise, and which man is compelled to declare in every word which he addresses to God.

The most beautiful, and perhaps the most rational, of all superstitions is that which attributes to the heavenly bodies the power of ordering all earthly events. Among all the natural objects which delight the senses, or appeal to the imagination, there are none which are so rich at once in charms for the eye and in food for the mind as an eastern sky on a clear night. Of the myriads of stars in the deep dark vault there is not one that is not lovely in itself, nor one that is not typical of order. As each pursues its appointed way, sometimes lost to view, but always returning at its appointed time, never destroying or attacking its fellows, it suggests the idea of a destiny benevolent but immutable.

The astrologers of Persia and Egypt must soon have discovered, not only that the succession of the seasons is as certain as the course of the moon and the stars, but that the seasons themselves depend upon the relative positions of the stars, the earth, and the sun. Night and day, summer and winter, seedtime and harvest, the blossom and the fruit, the breeding of cattle, and the flow of the tides are all influenced by the position of the sun or the moon, and may be predicted with certainty by the aid of astronomy. If the sun ceased to give us its light and heat, the pastures would cease to be green with herbage, the crops would cease to grow, the flocks and herds would cease to multiply, and man himself would cease to exist. The wise men of the east had in very early times advanced so far in knowledge that these facts were as clearly comprehended by them as by the astronomers and the chemists of a later age. But there was more poetry in their minds than in the minds of our more practical men of science. They were not content to regard light and heat as mere force; they converted the object from which heat and light appeared to come into a person—a God that had a will and ought to be worshipped.

There was thus introduced in very early times a difficulty which has recurred again and again in various religions, the difficulty of reconciling destiny with free will. The worshippers of the sun and the planets believed that the future could be predicted by the aid of the heavens, and were yet inconsistent enough to beseech the immutable stars for changes in their fate. They reasoned well enough at first; they were certain that many terrestrial events were brought to pass by celestial agency, and could be predicted through a knowledge of the celestial bodies; and they inferred that, as a necessary consequence, all events could be predicted in a similar manner. They omitted only one scientific process—verification. So far went their reason; then came in their own feelings, or the feelings of their disciples. It is terrible to face the unalterable, the inexorable fate. The Being that possessed incalculable power must surely, they thought, be not devoid of mercy, of tenderness, of sympathy for woe. He might be angry like themselves, and His anger might be pacified. He could not have created them with wills of which the apparent freedom was but a mockery, with hopes that were but delusions, with life that was no better than the existence of the falling leaf or the running water.

They would not believe all this. They would think better of themselves and better of the gods; for the planets soon became gods, like the sun, though less in power. The planets which, according to astrology, ruled by inflexible laws, presided, according to superstition, over the ever-changing phases of life. If every day and every hour were influenced by the sun, or the moon, or some minor luminary, every human interest was the special care of a deity identical in name and in attributes with one of the heavenly bodies. The Sage discovered the power, and believed in more than the power of the heavens over the earth; the poet transferred the human form and human passions to the skies.

Astrology, however, has not been the only source of superstition. The earth has contributed gods no less than the heavens. The deification and personification of terrestrial objects, or of human powers, may, perhaps, in some cases, be merely a degradation of astrology. The respect once paid to the presiding deity may have been gradually transferred to the faculties over which he presided, to the earthly emblems of his influence. Star-worship is, however, but one development of an almost universal tendency, and a development which implies a considerable degree of civilisation. It requires less intellectual effort to conceive the tides and the storms as independent powers, or as powers possessed by spirits, than to conceive them as the dependents of a power or powers by which they are ruled from afar. Water-gods and storm-gods have taken the human form without the intervention of astrology; they have received prayers and sacrifices, and thank-offerings without number. In some mythologies there is not a stream nor a grove without its spirit, nor a place of any kind without its genius.* The earth, and the air, and the waters have been peopled with innumerable beings in the likeness of men and women, sometimes hating with the fiercest of human passions, sometimes loving with the sweetest of human sympathies.

In all these Gods of the past, human nature has but expressed its hopes, and its fears, its joys and its miseries, its defeats and its victories, its littleness and its greatness. Mythology and superstition are the mirrors of mankind; they reflect all the knowledge, and all the feelings, and all the motives of the people to which they belong. Though the earliest tales may have lost their meaning, though the corruptions of language may obscure a beautiful allegory, though poet succeeding poet may have destroyed the simplicity of the fable which they have adorned, still each story in the form in which it exists is a chronicle of the manners of men, and of the character and the source of their religious feelings. Even the worship of bulls and serpents is an appeal to human sentiments no less than the worship of Apollo or Minerva. The fact that some animals are distinguished from others by great differences of passion or instinct is known even to the savage; and it is not wonderful that men should have paid homage to strength, and courage, and craft, under the form

* This fact is a source of constant and bitter complaint to all the early Christian fathers. Such superstitions were common to almost all peoples, and almost all countries.

of the animals in which they are most conspicuous. In Egypt, however, there was what appears at first sight a brute-worship which a very slight knowledge of astrology will suffice to explain. A resemblance was traced between various groups of stars and various animals found upon the earth, and the names of the animals were by a very natural process made to serve as names of the constellations. It was soon discovered that the sun appeared to run his course through twelve of these constellations in the year, returning always to the point from which he had started. It thus became convenient to designate the seasons by the position of the sun. At the vernal equinox the sun entered Aries, or the Ram; and as a symbol of the spring the Egyptians made the God Ammon, whom they represented with the head and horns of a ram, but in whom, nevertheless Alexander the Great recognised, as he supposed, the Zeus of the Greeks. So the worship of Apis, the calf-god, and of the sacred bull, is simply the worship of the sun in Taurus, into which constellation he entered after leaving Aries. The Phœnix, which rises ever new from its own ashes, is but the Sun, which rises again and again from the night in which it is lost. The faith of the Egyptians, though it seems, until it is explained, the most brutal and monstrous which ever disgraced humanity, is but an elaborate form of sun-worship appealing to the senses through its emblems. The sun was worshipped as the sun simply, under the name of Ra; but it was the doctrine of the astrologers* that his influence varied with the constellation through which he might be passing; and he was worshipped under his different characters, just as Jupiter was worshipped by the Romans, sometimes as the thunderer, sometimes as the giver of rain, and sometimes as the god of boundaries. Had the Egyptians discovered one very important astronomical fact, which subsequent observation has added to our knowledge, the gods Ammon and Apis would never have been worshipped. Astronomers still announce that the sun enters Aries at the vernal equinox, but they speak of the sign and not of the constellation. The twelve signs of the Zodiac and their names are still retained as an arbitrary division of the sun's apparent course; but the constellations and the signs are no longer identical. The precession of the equinoxes has falsified all the wisdom and all the religion of the Egyptians.

Through ram-worship and bull-worship, through sun-worship, and star-worship, through storm-worship and water-worship, through prayers to all the good gods, and bribes to all the bad gods, may be seen the worship of a magnified humanity. It is necessary to inquire more closely what is the explanation of this universal law—why man in all countries seeks for a god, and why all the gods have, in one aspect at least, a resemblance to man. In their own frames, and in everything external to them, there is something to remind human beings of their weakness. In the midst of life we are in death. There is no power in all nature that we can change by any effort of our own. The hopes created by the best laid plans may be destroyed

* Ptolemy, *Tetrabib.*

by circumstances beyond the human ken. The fears which hem us in, and appear to leave no possibility of escape, may be dissipated by some unforeseen event. The affections that cling around a beloved object may be left torn and bleeding by some calamity that suggests the existence of a cruel and a quasi-human foe. The proudest and the strongest, the bravest and the wisest, are made to feel the humiliation of dependence, and that sense of dependence or of weakness is the foundation of all religion.

If religion in its first form is an attribute of humanity, it is still more an attribute of the female sex. All men are dependent, but women are even more dependent than men. It is a part of their nature to persuade, to implore, to please and sometime to sacrifice. It is a part of their nature to believe in the efficacy of entreaty; and what is a part of their nature is a part also of the nature of the weaker and more oppressed among men. It is not difficult for any human being to discover how much depends upon the good will and sympathy of others. The smile of a king or the frown of a tyrant, the mercy of an enemy or the loss of a friend, may make the misery or the happiness of a life; they may follow the soft word or the harsh word, conciliation or neglect. And it is not wonderful that the unseen power should have been likened to the powers which are seen. The loss to the mother is the same whether the son be taken from her by the spear of the foe or by the shaft of disease; the loss to the farmer is the same whether his cattle be stolen, or destroyed by murrain, whether his crops fail through want of sun, or are trampled down by human feet. Ruin or prosperity may be brought to pass through human agency or by means which human intelligence cannot understand; still men only followed a law of their being when they connected similar effects with similar causes.

A survey of all those ancient religions which are best known to us shows that they all agreed in reflecting human nature in the Heavens. They appear, however, to have differed in one important respect; the reflection of some was purely mental, the reflection of others was not only mental but corporeal. Some gave human passions and devices to the visible objects of the sky; others represented quasi-human beings as the governors of those objects themselves. But it may be safely asserted not only of those ancient faiths, but of every popular creed in every age, that they all exhibit two well-marked mental phenomena:

1. The operation of the emotion of fear.
2. The operation of that Intellectual Law* of Association, according to which like effects are attributed to like causes.

In short, the average human being has a dread of certain unknown powers because he likens them to himself. I do not, of course, assert that the same elements enter into all religions in the same proportions. The emotional element must necessarily vary with the individual; both the quantity and the quality of fear must be different in different persons; and the evidence of this fact is to be

* Called by Professor Bain the "law of similarity." (See the *Senses and the Intellect*, *passim*.)

discovered in the preference shown by some for a patron god or saint of one character, and by others for one of another character. But every widely accepted religion gives play to the emotions, and every religion which gives play to the emotions introduces a power which is propitiated and therefore feared.

It will, I am aware, be objected that the religion of Jesus is a religion not of fear but of love, and it will be objected also that no religion can be popular unless it offers comfort and happiness in one form or other. I do not dispute either of these statements, but I maintain, nevertheless, that fear is the great emotional basis of all popular religions. Out of fear springs hope, and a religion becomes widely diffused in proportion as it encourages the hopes of the fearful; but even Christianity, with its exquisite tenderness for the weak and the oppressed, declares that all shall be damned who, after the gospel has been preached to them, will not believe. It may be true that the emotional foundation of every popular religion is hope, but it is no less true that the foundation is laid on fear.

PART II.—*The Elements of Philosophic Creeds.*—Thus far I have dealt only with the religion of great masses—with the religion which appeals to popular feeling and in a certain sense to popular comprehension. I now approach that other form of religion to which the name of philosophy is commonly given, but which is, after all, only another aspect of human nature striving for a knowledge of that which it cannot grasp by its own faculties. The average man, though he feels a desire to know something of the universe and of the causes which he believes to be external to himself, is ready to take for granted the current faith of the day. But minds of a certain class existing in almost every age, though always limited in number, burn to make discoveries for themselves and to penetrate beyond the dogmas of theology. The history of the attempts made by such minds to found a science of Ontology, or of the Absolute, or in other words to escape the laws of their own existence, constitutes, perhaps, at once the most painful and the most instructive chapter in the history of man. The story repeats itself again and again; it is a circle beginning with inquiry and coming round to scepticism—which is but inquiry, or the admission that knowledge is wanting, expressed in Greek. And this serpent of delusive hope has been biting its own tail for more than twenty centuries.* Of this fact there is no doubt; but what, it may be asked, is the cause.

The cause, I answer, is to be found in the great fundamental law of the intellect, the law of relativity or discrimination—the law that the mind can have no knowledge of any objects except in their relation to another or other objects, and in relation also to itself. This law there seems every reason to believe that the founder of the Buddhist religion, whoever he may have been, not only discovered but appreciated in its full significance. It seems to be admitted by common consent that the person to whom the epithet of Buddha has been given separated himself from the world during many years which

* The story is told with admirable clearness in Mr. G. H. Lewes's *Biographical History of Philosophy*.

he passed in reflection, and that when he re-appeared from his seclusion he believed in nothing, he saw no reality anywhere, and considered that extinction or absorption into the nothing was the great end of intellectual life. It is, without doubt possible that with our modern ideas we may attribute modern forms of thought to ancient thinkers, but the words in which Buddha's conclusions are expressed do certainly appear to imply a knowledge of the great law that we cannot know anything, except in its double relation to other things and to ourselves, and that the philosopher's desire for a higher knowledge is to human beings, as at present constituted, a desire for nothing—for annihilation.

Before, however, I enter further upon the consideration of this great law in its religious aspect, I feel it necessary to remark that a distinction must be drawn between the doctrines of Buddha and the various subsequent forms of Buddhism. Throughout all nature there appear to be connecting links; and in religion, as in all other matters there are such imperceptible gradations that there is a certain point at which it is difficult to pronounce whether emotion still forms an element or not, just as it is difficult to pronounce whether some organisms belong to the animal or the vegetable kingdom. In Buddhism especially are these connecting links of religion to be found. The Buddhists of the contemplative Mahayana school personified the "nothing" by supposing it, under the name of Alaya, to be a soul and the substratum of all things. This conversion of nothing into a something was of course, if I have correctly interpreted Buddha's teaching, a direct contradiction of his most cherished belief; and yet perhaps it was the only interpretation possible for minds less profound than his in an age when he alone had discovered the fundamental law of mind. From the doctrine of a soul to the doctrine of a personal deity with definite attributes, the transition is not very difficult; and in Japan Buddha became a supreme God who sits enthroned in a heaven of diamonds, and who is an Almighty creator.*

The various forms of the Buddhist religion, even were there no other reason, would compel us to include the creed of the vulgar in the same category with the conclusions of the metaphysician. To the latter his conclusions are his religion no less than their faith to the former; and though it is possible, and for certain purposes convenient, to draw a broad line of demarcation between the two, yet it is no less certain that the immediate followers of any great metaphysico-religious teacher vacillate between adherence to a formula which they but imperfectly comprehend, and the desire to enunciate

* I am unable (and I can hardly say that I regret it) to confirm my views of Buddha and Buddhism by that style of reference which is affected by accurate compilers. To give chapter and verse for a number of insignificant facts might command the approbation of the *Saturday Review*, but would give no assistance towards the comprehension of a great mind. I can only say that I have formed my opinion after a very careful comparison of the best and most recent works on Buddhism, including those of Schlagintweit and Professor Max Müller.

more positive doctrines which seem to them more intelligible. Thus it happens that whatever the teaching of the founder may have been, there is no popular creed which is not distinctly anthropomorphic. Philosophers themselves, too, and many even of those who recognise the great law of relativity,* often forget this fundamental law in practice, and so give a species of philosophic sanction to religion in its more popular form. At the very moment at which the existence of "the absolute," or "the infinite," or "the unconditioned," or "the all" or even "the nothing" is asserted or inferred as a fact independent of human consciousness, the great law is forgotten and the first step is made towards a renewal in some form or other, of the primary or anthropomorphic kind of faith. The philosopher's "something which underlies phenomena" stands in the place of (and is frequently called) his god. His esoteric disciples accept his views perhaps in nearly the same sense as himself, but when they preach to the outer world they forget the associations which already belong in every country to the name of God, and are surprised to discover that philosophy leaves the creed of the masses as nearly as possible where it was before.

Apart, then, from Revelation with which it is not our province to deal, it appears that religions vary with the introduction of the intellectual elements and the exclusion of the emotional. In a land in which the popular creed accepted the idea of Zeus enthroned on a lofty mountain and hurling his thunderbolts far and wide, it was possible for Pyrrho to pass through all the phases of thought which lead to scepticism—to the admission that we can know nothing of existence in itself, if such existence there be. In another land, into which the sceptical doctrines of Buddha were introduced as a creed, it was possible to evolve the idea of a God-like Zeus, seated on a diamond throne. These two lands were as widely separated by space, by race, by climate, and by language as Greece and Japan. Can any more convincing proof be needed that the psychical ground-work of religion is everywhere the same, but that religion differs in proportion as pure intellect is brought to bear upon the problems with which it deals?

In tracing the links which connect the ordinary religion of great masses with the religion of pure intellect, I have hitherto left almost unnoticed the important part which has been played by language in persuading the human mind to deceive itself. The growing science of comparative mythology illustrates this remarkable phenomenon in one of its aspects; the positive conclusions of some systems of philosophy illustrate it in another. In the former case language has at length been forced to reveal her own delusions; in the latter a different method is necessary, though the process discovered by comparative philology in the one case affords a clue to the process discoverable in the other. Nor is it necessary to admit all the conjectures

* Among these may be mentioned Sir W. Hamilton, Cousin, Hegel, and, I fear, at least one of the most justly distinguished thinkers of our own time.

of the most advanced students of mythology in order to detect the personification of natural objects and natural forces through the medium of words. It is plain enough that the history of Daphne,* considered as a person, is but a very realistic, or, if the term be preferred, poetical version of the dawn of day with its attendant and subsequent phenomena. It is perhaps less plain, but certainly not less true, that "the Unconditioned," "the Absolute," "the Infinite" and many other "thes" followed by a capital initial are words tending to a personification, it may be poetical but certainly realistic.

The difference between the mythological term and the philosophical term is this. The former, being originally the name of a phenomenon of which cognisance is taken by the senses, requires no intermediate step between its primary and its secondary or anthropomorphic signification; the dawn, which (as far as we are concerned) is an actual fact, is personified, and the name of the fact is transferred to the person. The philosophical term may no less undergo the same change of meaning; it may be, and frequently is, used to designate a personal divinity; but its origin can be traced back some stages farther, and in this respect there is a very important difference between it and the mythological term. But when the philosophical term is used as the name of a deity, it is not the name of anything tangible, visible, or appreciable by any of the senses; it is the name of an attribute, which attribute can always be resolved into a negation. The absolute, for instance, is the negation of the relative; the infinite of the finite; the unconditioned of the conditioned. The use of these words affords a most instructive illustration of the law of relativity, and of the manner in which it asserts itself through all the deceptions of language. All these delusive philosophical terms are found in pairs, and there can be no pair without a relation of some kind subsisting between its two constituents. But upon consideration, I think, it will invariably be found that each of these two constituents is, in every case, if not meaningless, at least inconceivable. It is obvious that no one can realise to himself the meaning of the negative term (as *e.g.* of the infinite) without realising the meaning of the positive (as *e.g.* of the finite). Now the "finite" as a something, or a totality of many somethings existing, *per se*, is to me at least wholly inconceivable. I know what a finite stick is, and what any other particular finite object is, but I do not know what "the finite" is except in the sense of an attribute possessed by various tangible or visible substances—by substances of which I can take cognisance by some of my senses. I may perceive, too, that many objects resemble others in so far as they are finite, but I am still no nearer a knowledge of "the finite" *per se*; and I am utterly unable to grasp the

* I have chosen the story of Daphne as a typical illustration, because it is one concerning the origin of which there can be no doubt. The word occurs, with little change of form, in different Aryan languages (*e.g.*, Ahana, Dahana, Daphne, Dawn), and the story is as simple as beautiful. The love and pursuit of the Sun are invariably followed by the death of the Dawn. (See Mr. G. W. Cox's *Manual of Comp. Myth., etc.*, and Professor Max Müller's paper on the same subject in the Oxford Essays.)

idea of a totality of things finite, because the law of relativity compels me to think of another thing or things beyond. And if I have no idea of the finite, in this sense, which is the philosophical sense, I have of course no idea of "the infinite," which can only be the negation of I know not what. In the use of all these philosophical terms we see mind led captive by symbols of its own creation. Certain words are coined in order to serve, in logical phrase, as the names of attributes, but there is a tendency in most human minds to regard these names as something more than the names of attributes, or perhaps rather to forget what is meant by the expression. We are all apt to forget, as Plato forgot, that when we speak of blueness, of humanity, or even of relativity, we are speaking only of modes of resemblance between various objects of sense or thought. All blue objects resemble each other in a particular manner, all human beings in another particular manner, all pairs of objects in standing towards each other in some relation. But no one has any cognisance of blueness, of humanity, or of relations of any kind apart from the blue objects, human objects, or objects in relation.* By a convenient fiction, however, it is possible to speak of any attribute, or in other words, of any mode of resemblance, in language identical in form with the language applied to the objects in which these modes of resemblance are traced. It is grammatically no less correct to say that blueness charms the sight than that the sky or the ocean charms the sight—that humanity has its troubles than that human beings have their troubles—that relations meet us everywhere than that we meet everywhere with objects in relation. But the faculty by which we give a name to an attribute, or mode of resemblance, is that faculty by which we are enabled to perceive similarity, and to which has been given the title of a law of association—the law of similarity. If we see a blue object to-day we think of blue objects we have seen on previous occasions and give to the mode of resemblance the name of blueness. And we perform just the same operation when we understand what we mean by the name of any attribute or any mode of resemblance.

If now we attempt to apply this method of examination to the term infinity, we shall discover, in the first place, that it means only the negation of finity; and when we apply it to the term finity, if such a word may be coined for the occasion, we shall see at once that no more is meant than that mode of resemblance which we perceive in finite objects. A short thick stick, and a long thin stick resemble each other in having ends; finity or finitude is the term used to express that mode of resemblance, to express the relation in which finite objects stand towards each other. To use the word in any other signification is to forget what an attribute really is, to change the value of the symbols used in psychological problems. What would be thought of a mathematician who having discovered

* This undoubted fact depends ultimately on the "law of inseparable association", which it is not necessary to dwell upon here, but which is very clearly explained by Mr. J. S. Mill, in his *Examination of Sir W. Hamilton's Philosophy*, chap. xiv.

the value of x to be $y-z$ should endeavour to ascertain its numerical equivalent on the assumption that $x=2(y+z)$? Yet an analogous mistake is continually made by seekers after infinity, who quite forget that, if they retain the value originally assigned to their symbols throughout their investigations, infinity means no more than the absence of that resemblance which is perceived between sticks or other objects of various lengths, breadths or diameters, of which resemblance we can have no knowledge except such as may come to us through the objects themselves.

What has been said of the finitude and infinitude, of the finite and the infinite, may be said *mutatis mutandis* of the other similar pairs of philosophical terms. I have selected the finite and the infinite for the purpose of illustrating my meaning, because the existence of the word infinity enabled me to point out the double ambiguity of meaning which is commonly wrapped up in these traps for acute intellects. Those philosophers who argue in favour of the independent existence of "infinity" do not draw any clear distinction between it and "the infinite." Nor can I draw any such distinction, as I do not profess to have any conception of either. But I can discover by the forms of language that "infinity" must be the negation of finity or finitude, and that "the infinite" must be the negation of "the finite." Of finity or finitude I know no more than that it is the name of an attribute—of a mode of resemblance—and expresses the fact that certain objects have been compared and have been found to agree in the possession of that attribute. The negation of this attribute conveys no definite idea to my mind. I have no experience of any objects in which the attribute is wanting, and, therefore, no experience of any objects in which the want of it can be regarded as a mode of resemblance. "The finite," on the other hand, which, when it is explained at all, is explained to mean the sum of all finite objects, is quite beyond the intellectual grasp, because every attempt to apprehend it can be made only on the assumption of a boundary between this totality of finite objects and an unknown region beyond. But this unknown region must itself be either finite or infinite. We cannot conceive it as infinite because we start with the idea of a boundary; we cannot conceive it as finite because we start with the supposition that it is beyond the sum of finite objects. And we discover, therefore, that it is mere self-deception to persuade ourselves that we have any idea either of "the finite" or of "the infinite" in the sense of a totality.* The law of relativity, which forces us to draw a comparison, presents an insuperable obstacle to omniscience even of things finite.

The process of personifying "the infinite" differs, then, from the process of personifying the dawn by the interposition of three distinct stages: (1) an attribute, or mode of resemblance, receives a name

* This is the conclusion arrived at by Mr. Herbert Spencer, though, strangely enough, he does not apply his discovery to "the relative" and "the absolute", but infers the positive existence of "the absolute." It seems clear that we cannot, for reasons similar to those already given, have any conception of "the relative" as a totality, and, therefore, *à fortiori*, that we cannot infer from it the existence of "the absolute."

(finitude) which can be used in grammatical construction in precisely the same manner as the name of an object possessing attributes ; (2) the absence of this attribute or mode of resemblance is, by a convenient linguistic fiction, described as being in itself an attribute (infinite) ; (3) a pair of names is coined for the purpose of expressing the totality of all modes of existence—one name to express the totality of all things possessing the particular attribute, “the finite ;” the other to express the totality of all things not possessing it, “the infinite.” And then “the infinite,” like the dawn, is in name—though certainly not like the dawn in conception—personified.

I shall probably be asked how it is possible, if the mind really works according to definite laws, that meaningless conclusions or false conclusions can ever be arrived at. I think it will not be very difficult to show that the operation of those very laws upon the imperfect contrivances of language is sufficient to explain the whole mystery. Could we always command a clear comprehension of the fact to be expressed together with a word free from all other associations and adequate to the expression of that fact, we should have fewer systems of philosophy, and an easier method of exposing fallacies. But when most words have many different meanings it is no easy matter, even with the best intentions, to avoid the pitfalls of ambiguity ; and many of these pitfalls have been laid by logicians in their attempts to escape from others. They have commonly perceived so much of the law of discrimination or relativity as to be aware that, in order to have any perception or conception of an object or of any of its attributes, it must be compared with something else. And, as a compendious way of stating this fact, they have invented such pairs of terms as horse and not-horse, blue and not-blue, man and not-man, finite and infinite. Now this is a curious illustration of the law of similarity ; like contrivances are applied to what are at first sight like cases, and where the cases really are like no harm is done. A horse is defined to the eye and to the recollection by objects which are not horses, blue objects by objects which are not blue, and so the law of discrimination is satisfied. But when finite objects are treated in the same way as a class opposed to infinite, there is no likeness except in the form of the words. A blue object is marked out by other objects not blue, *but a finite object, considered simply as finite, must necessarily be defined by objects which are also finite.* What is the boundary in the one case is the boundary in the other, and the correlate for what is finite is not what is infinite, but what is finite also ; and the coexistence of the two or more finite things satisfies the fundamental law of relativity, while the attempt to satisfy it by the invention of a something infinite ends in a meaningless contradiction in terms.*

As we perceive objects which are finite by the aid of others which are finite, so we perceive objects which stand in any relation by the aid of those in relation to which they stand. So, too, the law of dis-

* I believe I have not been anticipated in this solution of an ever-recurring paradox. It seems to me to supply a mode of escape from one of the greatest psychological difficulties, or, rather, to show that the difficulty does not exist.

crimination cannot be satisfied by the invention of a non-relative class as opposed to that which is relative, for here again there would be a contradiction in terms and a futile attempt to violate the law, in apparent obedience to which the term non-relative or absolute has been invented. The non-relative must be the correlate of the relative; it must be, in short, just that which by its name it proclaims itself not to be; it must be at once in relation and not in relation.

Thus these ultimate negative abstract terms of some past, and I fear I must add even some modern, philosophies can be traced back to their origin, divested of their accumulated ambiguities, and shown to be mere symbols used in obedience to a false analogy. Thus the worship of the Word may be seen to have been perpetuated for centuries in a manner not intended by the fourth Evangelist. But to what, it may be asked, does the scientific search for a basis of religion bring us when we have discovered abstractions to be mere abstractions and meaningless terms to be devoid of meaning? To Atheism, to Pantheism, or to Scepticism? I answer, to none of these. We come only to the humble recognition of our human weakness, of which we have all the certainty that human beings can possess.

Beyond this, both the Atheist and the Pantheist, like metaphysicians of various schools, attempt to penetrate—but in vain. Both the Pantheist and the Atheist deny the personality of God—of that which we cannot know. They lay down a dogma, which is at least as full of mystery, as difficult to comprehend, as the dogmas of any religion. We can no more realise to our own minds the attributes of Divinity when they are applied to matter or force than when they are applied to a person. "The eternal," which is, in its usual acceptation, only another name for "the infinite," is beyond the intellectual grasp of human beings. The "indestructibility of matter" and the "eternity of force" are terms which add nothing to our knowledge. It is within our experience that when matter undergoes a change it continues to be matter in another form, and that when force appears to be lost it is but transmuted into force again. But for all this we have only the evidence of our senses and of our reason; carry discovery as far as you please and it is at last only the discovery of what is true relatively to human beings. Could it be proved that force is but a mode of matter, or that matter is but a mode of force, the proof would still be good only for human beings, and would leave untouched the great problem which has been called philosophic, but which might with propriety be termed philomoric—the problem of ontology, of what exists independently of all sense and all inference.

But, it may be said, to deny the possibility of knowledge, is to preach, if not Atheism, at least Scepticism. Scepticism, however, is, I think, a word inapplicable to any profound conviction, and most of all when that conviction is consistent with nearly every form of religious belief. And, apart from the implicit faith which is given to a revelation, there cannot be any human conviction more profound than that of the psychologist concerning the fundamental law of the human intellect. This, it must be remembered, is knowledge as positive as any of which we are capable, though not knowledge in the sense in

which the ancient philosophers desired it. And, though the perception of this law teaches a humility as deep as that of any religious system, it brings at the same time its own consolation. For the very law which precludes all knowledge except of things in relation to each other, and to ourselves, denies the power of conceiving a totality even of such relative knowledge. "The greater the circle of light, the greater the boundary of darkness," said Sir Humphrey Davy; and this profound remark, when translated into psychological language, means that the greater the number of relations discovered, the greater must we conceive to be the number discoverable. Each point in the circle stands in some relation to a point, or points, beyond the circle, and as the circumference is increased, so also must be increased the number of the points and of their relations. Thus the admission of our weakness is rewarded by a sense of our power, and, though the scientific progress of the individual man may be bounded by the term of his life, the scientific progress of mankind can be bounded only by the term of the duration of the species.

This is the ultimate conclusion of psychology, and may, in a sense, be considered a religion—a religion of humility tempered with self-respect. It is also a possible ingredient in most of the popular religions—whether they are, or profess to be, revealed or not. I do not mean to assert that the ordinary believer of a popular creed has any distinct notion of the law of relativity, but he has a glimmering of the truth that he cannot, by his own unaided intellect, discover the origin and real nature of the world external to himself—if such a world there be. And this sense of mystery is very nearly allied to fear, and so connects the emotional element of all wide-spread religions with the purely intellectual element which constitutes the creed of the psychologist apart from his acceptance of revelation.

It appears then, I think, that the result has justified my statement that the attempts of what has been called philosophy must be considered in any search for the psychical elements of religion. Revelation has always presented itself as a message from that world which philosophy has striven in vain to reach. But while philosophy has been engaged in a fruitless struggle to free itself from the laws of the human mind, every messenger of every revelation has made use of those laws as the foundation upon which his edifice must be built. Thus the first preacher of every creed has stated either clearly or indistinctly, if not the law of relativity and the law that we cannot know anything except in its double relation to ourselves and to other objects—at least, some of the consequences which follow from that law. And thus he is always in perfect agreement with the teachings of psychology. No one, I trust, will suppose that I mention this fact as a proof of the truly divine origin of any revelation. To make use of such an argument, or of any scientific argument, would, in my opinion, be to place religion in a false position. Nor, on the other hand, when I show that every widely accepted creed goes beyond the simple recognition of human weakness, and makes out of human fears and human imagination a man-like god or gods, do I intend to argue against the truth of any form of faith. It is little more than a truism

to say that the religion of human beings could not have any existence if there were no human minds to entertain it. I have endeavoured to discover what special mental functions are necessary to religion, and, I trust, not altogether without success. I believe my conclusions illustrate some of the phenomena of the French revolution; I believe, too, that they give a certain power of predicting future events; and I do not hesitate to say that, so long as human beings are bound by the law of relativity, so long as they are susceptible of fear, and so long as they attribute like effects to like causes, so long will there be religion of one kind or other in every community.

The REV. DUNBAR HEATH said that the idea of this paper seemed to be that there was a sort of psychical protoplasm, the same in all men, which under different circumstances formed different organisms, as it were, for religion. The ordinary opinion is that religion speaks to a special faculty in man, and even Bishop Temple goes so far as to say that there is such a faculty under the name of conscience, thereby assuming that cats and dogs, who undoubtedly have a conscience, are thereby, *ipso facto*, the recipients of revelation. The idea is that certain non-human, or superhuman, or spiritual elements are first breathed into us, and then that these are cherished and addressed by a superhuman afflation; this is simply as impossible as that two and two should make five; for all that the human being can feel, think, or do, must of course, by the nature of things, be a human feeling, thought, or deed. This is one of the true points in Mr. Pike's paper. He then divides religion rightly into intellectual and emotional; but here we should remember that all compound states of the human mind are a combination of the intellectual and emotional, and that thus again religion does not depend on a special faculty. As to the relative value of these two elements, he (Mr. Heath) perfectly agreed with Buckle that the second is very far beneath the other. Mr. Heath then gave an instance of a radical contradiction between some of the human psychical elements when applied to religion; viz., in the religious psychical idea of God being a Person. A person, he showed, was necessarily a bounded and finite being, commonly called an individual. This contradicts the other common psychical idea of God being infinite or unbounded; the two distinctly contradicting each other. Finally, he said, looking round at the whole subject, we must give our best energies to the mighty task of enlightening intellect, and giving a charitable play to emotion.

The following gentlemen also took part in the discussion:—The Rev. Dunbar Heath, Mr. Dibley, Mr. Walter Dendy, Mr. Charlesworth, Mr. Macrae Moir, Mr. Moncure Conway, Mr. Reddie, and Mr. Blake.

The meeting then adjourned till 1st February.

ANNUAL MEETING.

JANUARY 18TH, 1870.

JOHN BEDDOE, Esq., M.D., PRESIDENT, IN THE CHAIR.

THE Minutes of the last Annual Meeting were read and confirmed.

The Treasurer submitted a Statement of Accounts, and read the following Report of Income and Expenditure for 1869. (See p. lxxiv.)

On the motion of Mr. ROBERT DES RUFFIÈRES, seconded by Mr. KAINES, the Report of the Auditors was adopted unanimously.

The Report of Council for 1869 was then read as follows.

Report of the Council of the Anthropological Society of London for the year 1869.

1. *Dr. Hunt.*—The Council have already stated by circular that it would have been scarcely respectful to the memory of the founder of the Anthropological Society of London to allow the year in which his unexpected death has occurred to close without any official notice of such an important and melancholy event. Accordingly they announced, with the deepest regret, that Dr. James Hunt, who was born in 1833, and founded the Anthropological Society of London in Jan. 1863, died Aug. 22nd, 1869, aged 36. Dr. Beddoe has prepared a biography of Dr. Hunt, and will read it to the meeting this day.

2. *Meetings.*—During the past year 1869, the seventh of the Society's existence, there have been fifteen, at which the following papers were read :

Dr. C. Carter Blake, F.G.S.—On a Skull from the Chinha Islands.

Rev. J. G. Wood, M.A., F.L.S.—On the Preparation and Uses of Poisons and Poisoned Weapons employed by Savage Races. On Flint Arrow-Heads from Lake Erie and Northern California.

Rev. J. C. Atkinson.—On Cleveland Gravehills.

Edward Peacock, Esq., F.S.A.—On Barrows at Cleatham.

J. W. Flower, Esq., F.G.S.—On a Kjökkenmödden in the Island of Herm.

John Beddoe, Esq., M.D., Pres. A.S.L.—On the Physical Characteristics of the People of Brittany. On the Stature and Bulk of Man in the British Islands.

Dr. E. S. Charnock, F.S.A.—On Locmariaker. On the Peoples of Transylvania.

A. L. Lewis, Esq.—On Locmariaker.

Dr. James Hunt, F.S.A.—On Ancient Megalithic Structures at Carnac, Brittany.

F. Hovenden, Esq.—Man an indestructible Atom.

L. Owen Pike, Esq., M.A.—On the alleged influence of Race on Religion. On the Methods of Anthropological Research.

J. S. Holden, Esq., M.D.—On a Calvaria from Glenarm, co. Antrim.

W. Bollaert, Esq., F.R.G.S.—On a Skull from Chimborazo. On the Hair of Canelos.

Dr. Davey, F.R.S.—On the Character of the Negro, chiefly in relation to industrial habits.

Lieutenant Eardley Wilmot and Dr. Beigel.—On the Hair of the Hovas of Madagascar.

Hodder M. Westropp, Esq., F.S.A.—On the Mythic Age.

P. Beveridge, Esq.—On Aboriginal Ovens of the Australians.

J. Park Harrison, Esq.—Flint Implements, etc., found at Arica, Peru. On Easter Island.

George Harris, Esq., F.S.A.—On the Distinctions, Mental and Moral, occasioned by Difference in Sex.

J. McGrigor Allan, Esq.—On the Real Difference in the Minds of Men and Women.

J. Gould Avery, Esq.—Civilisation, with especial reference to the so-called Celtic Inhabitants of Ireland.

F. G. H. Price and Mr. Charles Hamilton.—On the Customs and Habits of the Kafirs.

John Shortt, Esq., M.D.—Description of a series of Skulls from India.

Dr. J. S. Cassimati.—Hints on the Noömetre.

Dr. G. W. Leitner.—On the Shiná People, and on his Linguistic Discoveries in the *Shiná* country, comprising the Chilas, Ghilghitis, Astoris, Daraylis, and Goris; in *Khajuná*, the language of Hunza; and in *Nagyr* and *Kalashá*, the language of East Kafristan.

C. Staniland Wake, Esq.—On the Race Elements of the Peoples of Madagascar.

3. Elections.—

Fellows: Forty.

Honorary Fellow: M. le Baron d'Omalus d'Halloy, Ciney, Belgique, has been elected an Honorary Fellow, in the room of P. Carus, of Dresden, deceased.

Corresponding Members: Professor Ernest Hallier, Jena; Dr. A. Weisbach, of Constantinople; Dr. C. Swaving, of Batavia, Java; Dr. August Hirsch, of Berlin.

Local Secretaries: Jamaica, Charles Gilman, Esq.; Island of Cyprus, Dr. Euclide; Sonora, Mexico, Frank W. Breach, Esq.; Toulouse, France, M. Emile de Cartailhac; Trebizonde, Turkey in Asia, J. W. Peebles, Esq.

4. Resignations.—58 Fellows.

5. *Deaths*.—The Council have to announce the loss of six Fellows by death, besides Dr. Hunt; viz.:

Messrs. F. F. Meadows, H. C. Bagnall, Robert Dyce, and F. R. Pinchis; and Dr. Fk. Snaith.

6. *Library*.—Contributions have been received from the following persons and public bodies:

R. B. Foote, Esq., F.G.S.; W. Pinkerton, Esq., F.S.A.; Dr. Michael Sars; J. G. Macvicar, D.D.; M. L. Lartet; Professor Rupert Jones, F.G.S.; Thos. Hunt, Esq.; Dr. S. Ruge; J. M. Winn, M.D.; J. W. Kaye, Esq.; T. Bendshe, Esq.; H. Beigel, M.D.; Dr. Carter Blake; Lloyd P. Smith, Esq.; Dr. Pruner Bey; Scott Surtees, Esq.; Captain R. F. Burton; Dr. Barnard Davis; T. Squire Barrett, Esq.; Dr. Garbiglietti; Dr. G. W. Leitner; F. J. Jeffery; Henry Prigg, jun., Esq.; F. G. H. Price, Esq.; Dr. A. Weisbach; the Secretary of State for India; Dr. F. Pommerol; M. A. Quetelet; Dr. Langdon Down; W. C. Dendy, Esq.; Dr. Paul Broca; George Tate, Esq.; J. Bonomi, Esq.; M. le Comte Sage Strogonoff; Henry Woodward, Esq.; Sir Duncan Gibb, Bart.; Colonel A. Lane Fox; A. L. Lewis, Esq.; J. W. Jackson, Esq.; J. Fraser; Dr. Delgado Jugo; Dr. James Hunt; Dr. F. Müller; Professor W. Macdonald; J. F. Collingwood, Esq.; Dr. T. Ryan Tenison; Dr. A. Condereau; Professor Steenstrup; Dr. A. Bastian; R. Hartman, Esq.; Ed. Jarvis, M.D.; Professor A. Ecker; Captain Bedford Pim; Dr. Seemann; John Stuart, Esq., LL.D.; James Bonwick, Esq.; M. le Baron d'Omalus d'Halloy; Dr. Burmeister; Duc de Roussillon; the Canadian Institute; the Editor of the *Medical Press and Circular*; the Royal Society; the Royal University of Christiania; the Royal Academy of Sciences of Vienna; the Royal Academy of Dresden; Geolo. and Poly. Society of West Riding; Imperial Society of Moscow; Royal Institute of Palermo; Anthropological Society of Paris; Ethnographical Society of Paris; Asiatic Society of Bengal; Phil. and Nat. Hist. Society of Bengal; Royal United Service Institution; Royal Geographical Society; Geologists' Association; Ethnological Society; Imperial Academy of Sciences, St. Petersburg; United States Medical Department; Geological Society of Glasgow; Royal Society of Tasmania; Royal Society of Northern

Antiquaries; Royal Institution of Cornwall; Manx Society; the Editor of *Scientific Opinion*; the Editor of *Nature*; Royal Geological Society of Ireland; Cotteswold Nat. Field Club; Smithsonian Institute; Boston Society of Nat. Hist.; Essex Institute; Harvard College; Society of Antiquaries of Scotland; Academy of Nat. Sci., Philadelphia; Amsterdam Academy of Science; Editor of the *American Eclectic Review*.

7. *Museum*.—The following have contributed presents, which have been duly acknowledged in the *Journal*.

Dr. James Hunt, F.S.A.; Tom Craster, Esq.; W. Latta, Esq.; R. B. N. Walker, Esq.; Mrs. Burton; Dr. P. M. Duncan, F.R.S.; J. S. Wilson, Esq.; A. L. Lewis, Esq.; Professor Kopernicky; Rev. J. G. Wood, M.A., F.L.S.; Captain R. F. Burton.

8. *Publications*.—*Memoirs*: The third volume of the *Memoirs*, bound, price 25s., containing over 550 pages, and, amongst other papers, a very valuable one by Dr. Beddoe, "On the Stature and Bulk of Man in the British Islands," is now ready for delivery, and will be sent, post free, to all members on the Roll of the Society for 1870.

Anthropological Review: The executors of the late Dr. Hunt have undertaken to bring out the next two numbers of the *Anthropological Review*, as usual. The January number will shortly appear. The April number will include the biography of Dr. Hunt before mentioned.

Journal: The Council have under their consideration several plans for the future conduct of the Society's *Journal* and its other publications, of which due notice will be sent to the fellows.

Finances.—The income of the Society, exclusive of the balance carried over, has during the past year been £964 9s. 8d. The whole debt of the Society amounted on the 31st December, 1869, to £834 8s. 11d.

The Society has received from the sale of its publications during the year 1869, £58 16s. 2d. Each publication continues to have a small but steady sale, and the value of the stock in hand, exclusive of the Third Volume of *Memoirs*, estimated considerably below trade price, reaches £700.

The financial position of the Society is therefore sound; and notwithstanding the great, and in many ways irreparable loss which we have suffered, there is no reason to doubt the complete success of our Society, if the members will remain true to the science, and endeavour by enlisting fresh adherents, each to the best of his ability, and above all by the composition of scientific papers, to promote the cause and science of anthropology.

The Chairman then appointed Sir Duncan Gibb and Mr. Robert des Ruffières to act as scrutineers of the ballot which he declared to be open.

Mr. RANSOM moved, and Mr. J. STIRLING seconded the adoption of the Report.

Discussion having been invited, the following fellows of the Society took part in the same. Mr. Brabrook, Rev. Dunbar Heath, Dr. Beigel, Colonel Lane Fox, Mr. Hovenden, Mr. Walter Dendy and Mr. Avery.

The question was then put, and the Report was unanimously adopted.

The President delivered the Annual Address, as follows :

You can hardly fail to be reminded, when I rise to deliver the annual presidential address, of the several addresses of the kind previously delivered from this chair, all of which, except one for which we were indebted to our learned treasurer, Mr. Heath, were among the many benefits this Society owed to our departed friend, Dr. Hunt.

My predecessors have always given either a retrospective view of the achievements, or a prospective one of the duties and future action of the Society. It would be more pleasing to me to look forward to the future which is dawning on us. Our debt is very considerably lightened ; we have successfully weathered the trials of the year ; a certain number of members have left us, but some of these were little more than nominally members, while the residue may, we hope, be considered as tried and staunch supporters ; and, moreover, new members are continually joining our ranks. We have a volume of Memoirs to present to our fellows, containing some valuable papers ; and the Council have under consideration plans for effecting further improvements in the Journal of the Society, and thus keeping its readers fully abreast of the progress of our science abroad as well as at home. We have reason to expect valuable contributions from some of our local secretaries and foreign correspondents. Individually, I hope to have interesting matter for you from our friend Dr. Leitner, and from correspondents in South and East Africa.

But when we look back on the history of 1869, one black cloud overspreads and blots the retrospect.

It is not that the history of the year is in other points unsatisfactory. As I have already said, the debt of the Society has been very considerably diminished, while its property in the museum and library has continually been increasing. You have listened at our meetings to a number of papers containing a fair amount of original work or of speculative investigation, in various departments of anthropology ; and these meetings have been well, and in some instances very fully, attended.

What I may be allowed to call the ill-treatment of our science and its cultivators at the Exeter meeting of the British Association, apart from certain melancholy associations inseparably connected with it, is not, I think, a subject for regret ; for the injustice and impolicy of the course pursued by some of our opponents was so manifest as to provoke a decided reaction, and to add considerably to the probability that anthropology will obtain a fair recognition at the coming Liverpool gathering. Moreover, at a meeting convened by me at Exeter, with the advice and assistance of Dr. Hunt, and with a view to the furtherance of our efforts for such recognition, some of the most distinguished members of the Ethnological Society attended and made common cause with us ; all differences of opinion as to words and names being sunk for the time, and in relation to that important object.

Other events have occurred since that time, of good augury for our science, or for our society, or for both, and all tending strongly to confirm us in our belief, that we enjoy the best and most suitable name for a society with ends and aims such as ours. In the first place, a local Anthropological Society has been formed at Liverpool, and affiliated to our own. It counts very good names among its officers and active adherents, and bids fair to flourish and do good work. For the study of descriptive anthropology, I need hardly say that Liverpool affords as good a field as London itself, or perhaps even a better one in some respects. In Italy, at the metropolitan university of Florence, a chair of anthropology has been constituted, to be filled by Professor Mantegazza. And at Berlin an Anthropological Society has commenced what is likely to be a distinguished career, under the presidency of Professor Virchow, a man who touches nothing, from politics to pathology, which he does not adorn.

For this Society, however, the most important event of the year was a great misfortune, the premature and almost sudden death of our founder, colleague and friend, Dr. James Hunt, which took place at his residence, Ore House, near Hastings, on August the 29th, 1869, at the early age of thirty-six.

Dr. Hunt was born at Swanage in Dorset, in which county his family had been settled for many generations. His father, Mr. Thomas Hunt, while a student in the University of Cambridge, had had his attention attracted, by the infirmity of a fellow-collegian, to the subject of impediments in speech. He was a man of an original and inventive turn of mind, with considerable energy of character; and he devoted himself so zealously to the investigation of the nature of these impediments, and the means of removing them, that he became the most eminent authority, and the most successful practitioner in that way, in the United Kingdom. Mr. Hunt was not a member of the medical profession; but he was anxious that his son should bring to the further investigation and development of his system the advantages which a thorough medical education could give; and accordingly James Hunt entered on a regular course of medical study. He ultimately adopted as a profession the speciality of his father, abandoning the further prosecution of medicine as an art; but these early studies probably awakened in him the taste for anthropological investigation, and certainly gave him conspicuous advantages in its pursuit in after years.

In the study of the vocation he had chosen, he displayed the zeal and energy which so essentially characterised him in all his undertakings: he collected a complete library of works, English and foreign, bearing on the various branches of the subject; made numerous and valuable independent observations and improvements in treatment; and embodied the results of these studies in several published works, one of which, entitled *On Stammering and Stuttering, their Nature and Treatment*, was very much read, and is now passing through its seventh edition. Another, and a much larger and more comprehensive work, now out of print, was entitled, *A Manual of the Philosophy of Voice and Speech*. He was also the author of the

article on Stammering, which appears in a recent edition of the *Encyclopædia Britannica*; and at the time of his death he had in progress other works on the same or allied subjects. His practical success in the cure of impediments of speech has never, I believe, been equalled or even approached.

His first literary effort had been a memoir of his father. But it was in 1854, when he had but just attained his twenty-first year, that he began to give patent evidence of the bent of his tastes and the direction of his future career, by becoming a fellow of the Royal Society of Literature, and also of the Ethnological Society. He served on the council of the former for several years, became its Honorary Foreign Secretary, and held that office up to the time of his death. In 1856, he was elected a fellow of the Society of Antiquaries; and he usually devoted his vacation wanderings to the personal investigation of objects of archæological interest, relative to which numerous interesting papers proceeded from his fertile pen.

I have said that as early as 1854 he joined the Ethnological Society. That Society had then been in existence about eleven years, from the time of its foundation by our much valued colleague, Dr. Richard King. It had had, in a certain sense, a predecessor in the Aborigines Protection Society, a body with mixed scientific and philanthropic objects, which had been constituted as far back as 1837. In 1842, Dr. King, perceiving that the scientific element of the society was altogether overshadowed by the philanthropic, and that a promising and rich harvest of science was being neglected, conceived the happy idea of founding an Ethnological Society, for the study of the distinguishing characteristics, physical and moral, of the varieties of mankind, and the causes of such characteristics. Towards the close of 1843 such a society was constituted, and for a series of years enjoyed an active and flourishing life.

Dr. Hunt, after his election, became a zealous and active member of the Ethnological Society. After some years, I believe in 1859, he accepted the office of Honorary Secretary. In that capacity he strove with great success to increase the strength, and re-kindle the flagging energy of the Society, which by that time had lost very much of the impetus originally communicated to it by Dr. King and his coadjutors. In recognition of the important services of Dr. Hunt, he was elected, on his resignation of the secretaryship after three years of zealous and successful service, to the well-merited distinction of an honorary fellowship.

About the same time, Dr. Hunt was also active in the geographical section of the British Association, in which he read an important paper at the Oxford meeting of 1860. He was, however, justly dissatisfied with the dislocated and inferior position held by his favourite subject in Section E of the Association. He saw, moreover, that in view of the rapid development of pre-historic archæology, and the dawn of light shed thereby on the science of man; in view, too, of the increasing interest acquired by such questions as that of the origin and variation of species, and of the connection of anatomy and psychology, it was necessary that a society should exist in Eng-

land which should avow broader and loftier aims than those of the Ethnological. He saw, too, that the Anthropological Society of Paris, which had recognised his scientific labours and position by conferring on him the title of Foreign Associate, had on such principles achieved a brilliant and successful *début*. Meanwhile, the science of man in its various branches was being cultivated assiduously by eminent men, not only in France, but in Germany, Switzerland, Sweden, Russia, and America; and it was Dr. Hunt's desire to furnish a means whereby the advances and acquisitions of the science in other countries should become available to its students in his own country.

Though he had succeeded in greatly advancing the interests of the Ethnological Society, and though many of its members duly appreciated the expansive views and projects of Dr. Hunt; he was not able, in consequence of the opposition of others, to remodel that society as he wished. He was thus led, in 1862, to conceive the idea of founding a new society, whose scope should, in his own words, embrace, "everything that would light on the physical or psychological history of man;" and which should accept the aid of "the geologist, archæologist, anatomist, physiologist, psychologist and philologist;" and which should also take account of the progress of anthropology in other countries, and, as a publishing society, communicate to its fellows, by translations and republications, the most important works of its foreign cultivators. He chose for the projected society the name of Anthropological, as being older, more significant and more comprehensive than that of Ethnological, and as having also been adopted, or being in process of adoption, by scientific bodies and individuals in foreign countries. And it was his hope that the new association would in the fulness of time embrace and incorporate the old one, as the word anthropology embraces and comprehends that of ethnology.

In carrying out the idea he had conceived, his sanguine energy and unceasing industry told with great effect; and in February 1863, when the first meeting of the Anthropological Society of London was held, he had already obtained an amount of success, in the numbers and scientific status of those who had given in their adhesion, which amply justified the course he had taken. In the capacity of president of the new society he delivered an introductory address on the study of anthropology, which was one of the best of his works, at once farsighted and moderate, enthusiastic and cautious.

It was at this period that Dr. Hunt set on foot the *Anthropological Review*, which was meant to be a means for diffusing miscellaneous information on anthropological subjects, and also for reporting the proceedings of the Society. This publication, however, soon crystallised itself, as it were, into its two essential elements, the *Review* proper, which was still carried on by Dr. Hunt, and the *Journal* of the Anthropological Society, which was published and issued simultaneously with the *Review*.

The subsequent history of Dr. Hunt, as a man of science, is as well known to such of my hearers as were early adherents of the Society as it is to myself. For he so thoroughly devoted himself to

the interests of the new body, to which he was bound by so many reciprocal ties, that he may be said to have lived chiefly in and for its life and prosperity.

During four years he continued to preside over it, having been three times re-elected to do so. Seeing that the Society had long been established on a firm basis, he was anxious to retire from this position; and in 1867 Captain Burton was elected to succeed him, but Dr. Hunt, as director, continued to labour for the welfare of the Society, the presidency of which he somewhat reluctantly consented to reassume in 1868. Besides many papers of less importance which appeared in the *Anthropological Review*, or in the transactions of the British Association, he produced during this period a series of annual presidential addresses, and a paper on the negro's place in nature, which attracted much attention, and long furnished a text of contention for the two extreme schools of opinion respecting the negro; moreover, he translated for the Society Carl Vogt's *Lectures on Man*. He also personally investigated the barrows, megaliths, and other prehistoric monuments of Shetland, Dorset and Bretagne, carried out an extensive series of cephalometrical observations in Norway, and communicated the results of his labours, in more or less detail, to the Society. And at the annual meetings of the British Association, he continued loyally and unweariedly to struggle to secure for his favourite science suitable and permanent recognition, obtaining various measures of satisfaction or disappointment, but remaining always confident of ultimate success.

After his retirement from his fourth presidency, a portrait testimonial was presented to his family by a number of fellows of the Society, in order to mark their sense of his great labours and deserts. During his fifth presidency occurred the *rapprochement* between the Anthropological and Ethnological Societies, which at one time seemed likely to lead to an amalgamation, to which the way had been paved by the pretty general adoption of the principles on which the former had been founded. It may suffice to remind you that on the failure of the negotiations, which occurred through no fault on Dr. Hunt's part, he loyally carried out an engagement which he had made, by resigning his office, to which Dr. Barnard Davis was elected; but at the entreaty of that gentleman and of the society generally, he consented to retain the presidency until January 1869, when he finally retired from it. His constitution had never been very robust, and during the period at which he was most actively exerting himself for the Society, he had sustained more than one serious illness. His health was rather below par in August of the past year, when the Exeter meeting of the British Association occurred, notwithstanding which, having been appointed to take charge of the interests of the Society at the meeting, he repaired to Exeter in order to fulfil that duty. The weather at the time was unusually hot, and the sun very powerful, and to that sun Dr. Hunt appears to have incautiously exposed himself, at the time when his brain was much overwrought. Acute inflammatory symptoms set in: he was at once removed to his home under the care of his friend and colleague, Dr. King; but in spite of all that could be done, he breathed his last within a week,

leaving behind him a widow and five children, and a wide circle of sorrowing friends.

A long list of honorary memberships and other distinctions, conferred on him by foreign scientific bodies, testifies to the position he held among foreign savans, a position rarely attained at so early an age. In 1855, he had become a doctor of philosophy in the University of Giessen, and in 1867, received the degree of doctor of medicine, *honoris causâ*. He was a member of the Leopoldine Academy, Dresden; of the Medical Association of Darmstadt; of the Upper Hesse Natural History Society; of the Société Parisienne d'Archæologie et d'Histoire; of the Congrès International d'Anthropologie et d'Archæologie Préhistorique; of the Anthropological Society of Paris; of the Sociedad Antropológica Española; of the Société des Amis de la Nature de Moscou, etc.

As a man of science, however, his chief and real monument is the Anthropological Society. Long may it endure and flourish to do honour to his memory!

As a man and as a colleague, the appreciation of his character is not difficult; and few indeed, I think, would be found, who would not agree with me in estimating as I did and do, the warmth of his heart and the singleness and unselfishness of his nature. In all he said and did for the Society he appeared to me to think solely of its interests; and when his reason was convinced he was always ready to sacrifice his feelings. Quick of thought, of feeling, and of speech, he was sometimes hurried into expressions which might have grated on the susceptibilities of others; but no one was so ready in cooler moments to make allowance for those susceptibilities, and to concede everything that was due, or even more than was due, to the merits of an antagonist. In my own official capacity, during the last few months of his life, I owed much to his kindness and consideration: his advice was always at my service, but was never forced upon me; and he was always ready to sacrifice himself and his feelings, to assist in smoothing the path of the Society and its conductors.

Mr. E. W. BRABROOK moved, and Sir DUNCAN GIBB seconded, that the thanks of the Society be given to the President for his address, and that it be printed.—Carried by acclamation.

The PRESIDENT returned thanks.

On the motion of Mr. CHARLESWORTH, the thanks of the meeting were voted to the retiring officers and Members of Council.

Mr. HARRIS moved, and Dr. CHARNOCK seconded, a vote of thanks to the Auditors, Mr. E. W. Brabrook and Mr. A. L. Lewis.—Carried unanimously.

In the absence of the Director, and on his behalf, Mr. C. STANLAND WAKE moved the following resolution:

"To alter Regulation 20, by omitting the words 'No rule shall be altered unless two-thirds of the voters concur in the proposed change,' and to make a Regulation 58, as follows: 'No Regulation shall be made, altered, or rescinded except at the Annual General Meeting, and then only on the proposal of the Council, and by a majority of three-fourths of those voting.'"

No Fellow having seconded it, the Resolution was not put from the chair.

Mr. WAKE proposed, and Dr. CHARNOCK seconded, the following change in Regulation No. 4 :

"To alter Regulation 4, by omitting the words 'as well as *ex-officio* all ex-Presidents of the Anthropological Society of London.'"—Carried.

The Report of Scrutineers was brought up and read, as follows :

"*President*—John Beddoe, Esq., M.D.

"*Vice-Presidents*—H. Beigel, Esq., M.D. ; Captain R. F. Burton ; Dr. Charnock ; J. Barnard Davis, Esq., M.D., F.R.S. ; Captain Bedford Pim, R.N. ; Dr. Berthold Seemann.

"*Director*—Thos. Bendyshe, Esq., M.A.

"*Treasurer*—Rev. Dunbar I. Heath, M.A.

"*Council*—J. Gould Avery, Esq. ; J. Burford Carlill, Esq., M.D. ; S. E. Collingwood, Esq. ; Walter C. Dendy, Esq. ; George Harris, Esq. ; Jonathan Hutchinson, Esq. ; W. D. Kesteven, Esq. ; Kelburne King, Esq., M.D. ; Richard King, Esq., M.D. ; A. L. Lewis, Esq. ; St. George J. Mivart, Esq., F.R.S. ; Major S. R. I. Owen ; Edward Peacock, Esq., F.S.A. ; J. Spence Ramskill, Esq., M.D. ; C. Robert des Ruffières, Esq. ; John Thurnam, Esq., M.D. ; W. S. W. Vaux, Esq., F.R.S. ; C. Staniland Wake, Esq. ; Alfred Wiltshire, Esq., M.D. ; E. Villin, Esq.

"We find the above to have been duly elected Officers and Members of Council for the ensuing year.

(Signed)

"G. DUNCAN GIBB.

"C. ROBERT DES RUFFIERES."

On the motion of the President, thanks were voted to the Scrutineers, and the meeting separated.

FEBRUARY 1, 1870.

Captain BEDFORD PIM, R.N., V.P., IN THE CHAIR.

THE minutes of the previous meeting were confirmed.

New Fellows were announced ; viz., Sir Richard D. Hanson, 9, Neville Street, Onslow Gardens, S.W. ; and Samuel Nash, Esq., 44, Renshaw Street, Liverpool.

The list of presents was read as follows, and the thanks of the meeting were voted to the donors.

FOR THE LIBRARY.

From A. RAMSAY, Esq.—Supplement to the English Cyclopædia, Natural History, Parts 7 and 8.

From the AUTHOR.—The Love Poems of all Nations. By Joseph Kaines, Esq.

From Dr. C. CARTER BLAKE.—The Geological Magazine, No. 1, vol. vii.

From Dr. E. T. RYAN TENISON.—British Medical Journal, to date.

From the EDITOR.—Nature, to date.

- From the IMPERIAL ACADEMY OF SCIENCES, Vienna.—Sitzungsberichte der kaiserlichen Akademie der Wissenschaften Philos-histor. Classe, 60 Band, Heft 1, 2, 3. Ditto, 61 Band, Heft 1. Math.-Naturw., 1868, 1 Abtheil., 6, 7, 8, 9, 10; 2 ditto, 7, 8, 9, 10. 1869, 1 ditto, 1, 2; 2 ditto, 1, 2, 3. Register der Philos-histor. Classe, Heft 6.
- From the AUTHOR.—Has the Law of Natural Selection by Survival of the fittest failed in the case of Man? By Lawson Tait, Esq., F.A.S.L.
- From the GOVERNMENT OF NEW ZEALAND.—Statistics of New Zealand for 1868.
- From the AUTHOR.—Madagascar and the Malagasy. By Lieut. S. P. Oliver.
- From Dr. G. GERLAND.—Anthropologie der Naturvölker, vol. v. Dr. Theod. Waitz.
- From the SOCIETY.—Proceedings of the Asiatic Society of Bengal, No. x. Journal ditto, No. 111.
- From the AUTHOR.—The Theory of the Arts. 2 vols. By George Harris, Esq., F.S.A.
- From the AUTHOR.—Die Pfahlbauten im nördlichen Deutschland. Professor Virchow.
- From the SOCIETY.—Mémoires de la Société d'Anthropologie de Paris, tome iii, fasc. ii.
- From the SOCIETY.—Proceedings of the Society of Antiquaries of London, Nos. 3, 4, 5, and 6.
- From the UNIVERSITY OF CHRISTIANIA.—Generalberetning fra Gaustad Sindssygeasyl for aaret 1868. Norges Officielle Statistik udgiven 1 aaret 1868, c. No. 4; ditto, c. No. 5; 1869, c. No. 5. En Anatomisk Beskrivelse af de paa Over-og Underextremiteterne forekommende Bursae Mucosae. By A. I. D. Synnestvedt and Dr. J. Voss.

Major FREDERICK MILLINGEN, F.R.G.S., then read a paper "On the Negro Slaves in Turkey."

Few are the places on the face of the earth which can exhibit a greater variety of specimens of the human race than Stambul, the capital of the Sultan. From the white Caucasian to the black Negro, all the intervening tints and complexions are to be seen within the precincts of this metropolis, which, now-a-days, is what Babel must have been at the time of its famous tower. Amongst these various races, the African stands conspicuous on account both of the tint and of the number of its members. That this people forms an important portion of the population of Stambul, is evident enough when one considers that it is scarcely possible to pass through one of the streets of that town without meeting a negro, whether male or female.

Judging from this circumstance, it might even be inferred that the negro population of Constantinople is much greater than it really is. To ascertain exactly the total of these African inhabitants is rather a difficult task, as in the last Turkish census (1864) the different members of a harem figured in the computation on a rather queer principle. The local authorities adopted, as a statistical system, the plan

of not drawing any distinction whatsoever between a wife and a servant, or between a white and a black face. For the Turks, evidently, the generic substantive "women" is enough to express the species; what is the use of drawing fictitious distinctions between them? I shall not be, however, very far from the truth in calculating this negro population at 30,000 souls, a computation which has, as starting point, the fact that the sixty thousand Mussulman houses of Stambul and the suburbs possess, on an average, one slave for each two houses.

Unlike their kinsmen who have colonised the southern portion of the great American republic, the negroes of Turkey are not natives of the country, they have all been imported from Africa at a more or less advanced period of life, between the average ages of ten and twenty-five. Central Africa, the mother country of both, is the source out of which have flown for centuries two streams of forced immigration, one pouring its contingent westward by the Niger, and the other northward by the Nile.

To two causes is to be attributed the phenomenon that human beings are inflamed by the rage of profit, so far as to attack, kidnap, and sell each other, without pity or mercy. One of these causes is internal, particular to the country from where the slaves are brought, and originates from the rivalry, feuds, internecine wars, and the cupidity of the savage inhabitants of central Africa. From these arises the supply. The other cause of slavery is external, namely, the high premium offered as a reward to any one who succeeds in getting hold of his neighbour's daughter, wife, or sister, to exchange for the highest price. This cause acts more directly on the slave question—it constitutes the demand. The causes of supply and demand are so twisted and blended together that they secure to each other mutual support; it is evident that the existence of the one implies the co-existence of the other. The wild and ferocious negro quarrels with his neighbour, pitches into him, and thinks proper to indemnify himself for his pains by seizing any one of his enemies he can get hold of. Whether at that moment he speculates on the market prices or not, is immaterial, while the result sanctions such a supposition. A point, however, which ought to be taken into account as a sort of attenuating circumstance on behalf of the negro warrior is this, that though it may be easy to preach to him the immorality of his conduct, it would not be quite as easy to persuade him that it is such. Suppose the negro brings forward a logical objection to defeat the liberal aim of the philanthropist; and says, "that's very well, my good sir, but what do you advise me to take as an equivalent to human flesh? goods: we have none, our only property is a piece of linen which takes the place of the rather too primitive fig-leaves; what are we then to take, when victorious, from our enemies? must we return from the battle-field without booty, and with our hands empty? surely not—we make our enemies slaves and sell them to those who have riches to give us instead."

This way of reasoning is of a nature to justify slavery under existing circumstances, as slavery is evidently here the inevitable conse-

quence of war; in the impossibility of putting a stop to the latter, it would be lost labour to attempt to prevent the former. The evils of war bear a just proportion to the degree of civilisation attained by the fighting parties. The history of all nations puts this theory beyond doubt; we see there that the Briton or Celt was formerly as inveterate a slave-dealer as the African is to-day. This proves, therefore, that the negro finds it profitable to catch and sell slaves, and that necessity as well as custom sanction and legitimise such a practice.

The markets from which the Negro derived his profits were two—Turkey and America; of these, one has finally withdrawn from competition, whilst in the other the demand still exists.

The influence of the market over the slave question constitutes the second cause, the external one. Demand is a paramount point in any transaction, but especially in the present case the relation between demand and supply is such, that it may be asserted, without fear of exaggeration, that it is to this demand for slaves that are to be attributed the desultory and bloody wars which are waged in central Africa. If, in some instances, a tribe may attack another for reasons unconnected with the cupidity for slaves, most frequently it is owing to this cupidity that *razzias* take place, and that the conflicts which ensue are more sanguinary and more protracted. Thus it is but just to hold the late slave-holders of America, as well as the present Mussulman slave-holders, answerable for the wars of extermination of which their thirst for human victims is the cause. It is evident that if now the customers of Cairo, Mecca, or Constantinople, were not bidding twenty or thirty pounds for a slave, the victorious Negro chief would let the vanquished go free, or, at least, would allow him to exist under a sky congenial to his nature. Having exposed the motives which stimulate the Negro races to supply the markets with their enslaved brethren, I shall now explain the motives for the demand for slaves, and the reason why African slaves are so much sought after in Turkey.

The slave-holding countries in the East are Turkey, the regency of Tunis, Morocco, and Persia; in these markets the demand for Negro slaves arises exclusively from Mussulmans, the Christians being seldom slave-holders. Amongst the Mussulmans, however, the use of having slaves is universal; with them it is just as natural to have negro slaves as it is to have cats or dogs in the house. But at the same time it must be taken into account that this great demand for Negro slaves is based upon reasons far above fashion or fancy, as slavery is inherent in the religious and social system of Mohammedanism, and is congenial to the ideas and customs of Mussulman nations. This assertion that slavery is inherent in the very system of Islamism will startle many who believe in the compatibility of that antiquated system with modern civilisation. The arguments, however, which I am going to bring forward cannot fail from establishing such a fact as an axiom, putting it thus beyond the pale of controversy. I will therefore prove that slavery is inherent in the religious system; inherent in the social system; and, also, congenial to the ideas and customs of Mohammedan nations.

One of the earthly rewards which the Koran holds out to the victorious Moslem is that of reducing to bondage his foe, and of disposing of him as he choses; his soul excepted, everything belongs to the conqueror, even his dead body. The religious and political system of Mussulmanism being based on the principle of perpetual war, *Djehad*, enticements for the present and for the future life constitute an essential part of the system, and the right of possessing slaves is one amongst them.

This right is of course transferable, as any other title to property is; therefore the dealer who has made the acquisition of a slave from the original proprietor, the Negro conqueror, or the Arab kidnapper, commits, legally, his right to any customer (a Mussulman of course) who may bid the highest price. According to the Koranic law, such is the hold of the master over the slave that no earthly power is allowed to interfere between them; the master is answerable only to the Almighty for the manner in which he treats his slave. This unlimited power exerted over the slave is often the cause that masters take with impunity the lives of their slaves. The authorities, in such cases, either ignore or feign to ignore the event, because, legally, they have no right to interfere. According to the Koran, the only persons who may legally claim blood for blood in criminal cases are, either the nearest relations of the deceased, or (in case of a slave) his master. Now, in an instance of this sort, it is not likely that a master should present himself, asking from the tribunal justice for the blood of the slave he has himself slain. The Mussulmans, as a mass, are very tenacious of this right of holding slaves, and they will not allow that an infidel can indulge in such a luxury. As for European philanthropists, who try to put a stop to such a practice, they heartily wish them at the world's end.

Having briefly explained the theory of slavery as it is established by the Koran and understood by its followers, I will now come to the second point, and show how slavery is a social necessity amongst Mussulmans; to be convinced of this, one must bear in mind that in Mohammed's system, religious tenets and social laws are twisted and impasted together, forming, of the whole concern, a thorough gordian knot. It is on account of these difficulties, of a technical as well as of a practical nature, that the action of modern ideas always meets in the Mussulman element with an inert mass which never yields to persuasion, but only recoils before pressure. And what other explanation can be given of the great obstacles Sir Samuel Baker avows to have met with in the execution of his scheme for the suppression of slavery?

According to Lord Houghton's statement, made before the Royal Geographical Society, "the Egyptians did not seem to be disposed to support any such undertaking of Sir Samuel Baker's as the suppression of slavery, for the very simple reason that it is through the slave trade that they obtain a constant supply of domestics for their households." The discovery is a good one; but if this is so far true for the Egyptians, it is the same for the Turks, the Persians, and all other nations who live under the same system. Yes, this avowal of

Sir Samuel Baker's discloses the secret of the demand for Negro slaves: a supply of domestics is required to keep up the harems of the high and middle classes of Mussulman society, and Negritia must pour forth a constant supply of slaves. And this, because slaves are as much an essential part of the harem system, as the harem itself is of the religious and social system of Islam. The seclusion of women is for the Mussulman what one of the ten commandments is for the Christian; but how can that seclusion be enforced, if all the members of the harem are not submitted to the pressure of the same bondage? One or two women cannot, evidently, be kept tightly under lock, while their maids and attendants are free. Slavery is the natural consequence of seclusion.

The Mussulman religion once adopted, its system must be carried through; there is no alternative. If the Mussulman is to remain a Mussulman (I mean even of a medium standard, and not merely a bigoted one) he must protect the sacredness of the conjugal tie by shutting up his wife or wives in the best manner he can. Wives are, therefore, cut off from the outside world by all sorts of contrivances, amongst which is that of having slaves instead of free-born servants, who could serve as mediums to dangerous ideas and still more dangerous customs. It is evident that if the attendants of the harem were such, not only the hold of the master over them would be of little efficacy, but the outer world might become acquainted with scandals of all sorts.

To employ slaves is by far more convenient. For this end, the prudent Turk takes good care that the slave he buys should have *his eyes tied up*, a phrase which means that the first quality which a slave must possess is to be blind to the tricks and disorders of his master. Once in the harem, the white or Negro slave is submitted to the same system of seclusion as her mistress or mistresses are. A circumstance which renders the use of slaves indispensable, and forms an obstacle to the employment of free-born female attendants, is the formal injunction of the Koran to the effect that, not only the face, but the hands also, of a free-born Mussulman woman are to be concealed from strangers.* Is it possible that a servant maid could serve about the harem, day and night, thus muffled up, fearing lest the master of the house should let his eyes fall upon her face or hands? Even if the maid happened to be not very particular on this point, custom, the fear of comments, and the disapprobation of her relatives, would prevent her from violating ostensibly the laws of Mussulman religion. It is easy to understand, then, how people should object to employ girls wrapped up like so many bogies in white veils and sheets. The employment of Christian women has been thought of, as their religion would remove the inconvenience above stated, but the Mussulmans strongly object to it on grounds of self-preservation against the encroachments of the Christian element. The few Pashas who have employed Christian servant girls, adopted this course from motives of

* The Sherihat orders that the upper part of the hand is to remain concealed. As for the inside, a woman can show it; otherwise she could not even beg alms for her relief.

policy—with the object, I mean, of gaining in the eyes of Europeans.

Having so far shown that slavery is inherent in the religion and social system of Islam, it remains to be seen how slavery is congenial to the ideas and customs of Mussulman nations.

It is one of the characteristics of Orientals to lean towards despotism, whether it be actively or passively. The same annals which record the names of the despots who have crushed the East under their feet, testify to the servility of their subjects. Slavery has never had very repugnant features in the eyes of Orientals. The Turk is far from being an exception to the general rule: by instinct, in his own limited sphere, he must be either a despot, or the servant of a despot stronger than himself. Nothing can better satisfy the vanity of a Turk than to look upon himself as the master of some human being; as he contemplates two or three slaves standing silent and with folded arms before him, the Turk rises infinitely greater in his own estimation. This feature of the Turkish mind is tangible, and can be traced not only in the customs of the people but in their very idiom, common sayings, and proverbs. For instance, if, during the course of familiar conversation, a Turk wishes to say something in the shape of good omen, he will say, "*Kull kiolleh shaibih olah*," which means that the person in question may be lucky enough to become the master of numerous slaves. From the cradle, vaticinations of this sort are constantly made by mothers and nurses to their babies, while singing them to sleep; one of those verses ends in this way, "*Kull alaik hep bundah*," the meaning of which is, "Male slaves, female slaves, all will belong to him." Another remarkable thing of this sort is, that the phrase, "your servant," *votre serviteur*, is never employed by the Turks, but "your slave," "the most abject of your slaves," etc. In all such phrases, the word slave is employed instead of servant. On the strength of such evidences, I do not hesitate to assert that the slave holding passion has its roots in the very heart of the Turks, and that it is congenial to them as well as to the other Mussulman nations.

I must not omit to add here that the demand for slaves is founded also on pecuniary advantages; that the negro female slave is a lucrative article is proved by the following figures. Fifteen purses, say £75, is the maximum price of a strong and healthy negro, provided she is a good cook. Now, as it is difficult to find a cook amongst free-women under £15 per annum, an easy calculation will show that in the fifth year the negro slave will have redeemed her purchase money. That is surely a good investment in which the capital is doubled within ten years.

After having exposed the causes to which the supply and demand for slaves is to be attributed, I will now undertake to describe the manner in which slavery is carried on in Turkey, and show what lot attends the slaves. Reduced to the condition of slaves, the negro captives leave their country either following the course of the Nile, crammed twenty or thirty together in a boat, or they traverse, half on foot, half on camel's back, the wastes separating Central Africa from the countries bordering the Mediterranean and the Red Sea.

That the slaves imported into the dominions of the Sultan come from the regions neighbouring the sources of the Nile, is ascertained from the fact, that on questioning the negroes of Stamboul with reference to their native countries, they will invariably mention Kordofan, Darfur, Dangola or Abyssinia. The valley of the Nile is not, however, the only outlet of slavery, as many slaves are exported eastward to the market places of Arabia, while numbers cross the great Sarah and reach Tripoli of Barbary, and the frontiers of Tunis and Morocco. Living stock requires a greater number of entrepôts than goods in general do ; so, for the negro slave-trade entrepôts have been established at Gondokoro and Khartum on the Nile route, Massovah and Soakin to the east, and Fezan on the Sarah route. From these entrepôts the human merchandise is packed off to the chief emporiums at Cairo, Alexandria, Constantinople, Smyrna, Beyruth, Jeddah, Mecca and Medineh.

From the very outset on leaving their native land begins the career of toil and privations which is allotted to the poor slaves ; a thin garment covers their nakedness, and a white woollen blanket renders to them the services of cloak, quilt and mattress. Without any regard for either Mussulman decency or Christian philanthropy, men, women, and children are thrown promiscuously by their dealers into a boat or within the precinct of a filthy eastern *khan* (inn), where dry bread and soup every twenty-four hours is given them, so as to preserve them alive for the market place. It must be known that ill-treatment is a part of the craft of slave-dealers ; by this method the slave is sure to look up to the first customer as a deliverer and a benefactor, and will therefore show no great dislike at being sold.

The greatest part of the negro slaves imported into Turkey are females, and this for the reasons above stated, that the demand is exclusively for domestics serving in the harem. In Arabia, however, the case differs, as the inhabitants there do not seem to object to have African women as wives and odalisks. This practice has been carried to such an extent that, according to some travellers, its effects have been highly injurious to the purity of the Arabian blood.

The demand for negro men or lads is very slack in the large towns, but in the country they are sometimes required to watch and superintend workmen in the field. Eunuchs form, however, an exception, they being highly thought of ; the Sultan of Turkey, the Sultan of Morocco, the Khedive of Egypt, all of them possess a staff composed of several hundreds of eunuchs, who are expected to fulfil the duties of guardian angels of the harem. The grandees of those different courts also employ these wretched beings with just as much ostentation as a European aristocrat prides himself on his chasseur's feather cap. In the east, besides, the eunuchs are considered indispensable mediums between the harem and the outer world.

The barbarous operation to which are submitted these unhappy creatures does not take place at Cairo or Constantinople : the negro lads of fifteen or sixteen are mutilated while stopping at the entrepôts, at Gondokoro, Khartum, etc. It seems that only one out of three survives the operation. The pitiless slave-dealer, proof against all

feeling, calculates only that he must sell the stock he has in hand, with mutilation or not, at the best price it can fetch.

The eunuchs are, however, the most favoured among the negro slaves, their career being relatively a happier one. Owing probably to their neutral standing, they are on a footing of intimacy with both sexes. In the imperial household they enjoy influence and power, the Kizlar agasi, the chief eunuch, holding in the state an equal rank with the Grand Vezir, the Premier.

Let us now see what befalls the generality of negro slaves when they once make their *début* on the market-place. Some twenty years ago on their arrival at Constantinople, the slaves used to be stored up within the precincts of an imperial slave market, as at that period the slave-dealers were patentee-merchants. Such a scandal could not, however, be patronised any longer, and the Turks have continued the trade in an underhand way. Non-official markets were then opened at Sultan-Mehemet, at Tophaneh, and in some of the cafés and shops of Stambul. One of these places is opposite the mosque of Suleimanieh in the bazar named Teriaki-tcharshisi, the third shop to the left, looking westward, if my memory does not fail me. In these markets slaves are sold daily, the hours of brisk business being from eight to twelve a.m., Turkish time. Up to A.D. 1869, this state of things was in existence. The thirty or forty girls that come on the market at the same period, all find customers quickly enough: the Abyssinians on account of their good looks are the first to be disposed of; they are taken as upper servants in the harems of those whose limited means forbid them to indulge in a thorough-bred Circassian. The Abyssinians are also taken as economical odalisks by the lower class of amateurs. The genuine negro girls with flat noses and thick lips are doomed to the kitchen and the rough work of the house.

On being raised from the market the new master sends the slave to the bath, and gives her a clean set of linen and a calico suit of clothes. If the master happens to be a good-hearted man, the slave has a chance of being properly fed and clad; besides this she may obtain two or three shillings a month pocket money. On these terms she may go on for years till her frame gives way. There are cases in which negro slaves become old servants, loved and considered by their masters, and pass thus happily their old age. It happens sometimes also that slaves are freed by the master, and are established in life by marrying some old servant of the house; such cases are not, however, frequently met with.

As a rule, the lot attending these creatures is sad. They pass through the hands of ten or twenty masters, who make them lead the life of cab-horses, beat them at intervals, and at last sell them. Such treatment irritates the temper and inflames the passions of the African destitute, who, driven to despair, becomes a fury, wages war against her oppressors, and ends by becoming a hater of the white species. It is not to be wondered, then, if negroes have often been known to set fire to the wooden houses of Stamboul, as being the best means of retaliation they could devise.

After having been sold and re-sold over and over again, the negro

slave gets at last in a condition to be not even worth feeding; then she obtains her freedom, and she is let loose in the streets of Stamboul, without the means of subsistence or the power to provide for herself. Her lot then is to roam about town a cripple and a beggar. Many of them, however, knowing what is in store for them, do not wait for the arrival of the bad season, and try to provide for themselves beforehand. Either through the assistance of their kinsmen, or with the money which they have been able to save or somehow to steal, they manage to buy themselves free from the market. Alarmed at the consequences which might result from the existence in the capital of numbers of freed negroes, destitute of everything, the Turkish Government formed of these fellows a regiment some six or eight hundred strong. The special duty of these men is that of storing into the arsenal the timber which comes to Constantinople in rafts from the Black Sea. Two queer sorts of trade practised by freed negro-males are those of sorcerers and of chemical confectioners. The sorcerers manage to get a good living by working on the credulity of a superstitious population. They employ sacred fumigations and beverages, and distribute talismans (*nuskhas*) good for all evils. The chemical confectioners go about the streets selling a miraculous jam, which is highly patronised by the impotent proprietors of harems.

One of the peculiar features of the emigration of Negro slaves into Turkey is the fact that, though many of them marry among their kinsmen, and also with the whites, their progeny becomes extinct in the first or second generation. A descent in the third degree from pure Negro race, or from mixed lineage, is scarcely ever to be met with. The following statistics, the result of my personal observations, will serve to illustrate this statement.

CROSSED DESCENT.

Arab-Aisheh.....	First descent.....	Second, none.
Colonel Arab Seïd Bey	First descent.....	Second, none.
Major Ali Bey	First descent.....	Second, none.
General Mehemet Pasha	First descent.....	Second.
Mustapha	First descent.....	Second.
Atijeh	First descent.....	Second, none.

NEGRO DESCENT.

Hadji Abdullah.....	Six wives.....	First, none.
Fathmah-gadun.....	Three husbands.....	First, none.
Kanedji Mustapha.....	One wife	First, none.
Djevev.....	One wife	First.

It must be remarked that, in many cases, the offspring, whether of first, second, or third descent, die while in infancy, the race becoming thus extinct. The Negro Hadji Abdullah offers a most curious illustration of this phenomenon. This old fellow was an athlete in strength and size; but of the twenty and so many children which he had from his various wives, not one outlived the period of infancy.

The sterility of the Negro race in Turkey is due to the following causes: 1. The climate. 2. The condition to which they are reduced, and mode of life; these are enervating, demoralising, and proper

to destroy the germs of reproduction. 3rd. That when negroes are in a position to marry, they are generally old and exhausted. If we put aside the testimony of statistic computations, evidence of the complete destruction of the negro stock which has been imported into Turkey during the last four hundred years, is not wanting. Admitting that during that period every generation of believers has had for its own use 100,000 negro slaves, nearly a million and a half of Africans has been pouring like an ever flowing stream into the midst of the Mussulman population. Where are now-a-days to be found the traces of this alien race? Do the negroes form any separate settlement or population, as those in the southern states of America? Or have they been amalgamated and absorbed? No, they have been consumed and devoured, and such would inevitably be the fate of many other millions besides these. Voluptuousness and egotism are monsters ever eager after victims.

On comparing the lot which awaits the negro slaves in the east with the relatively happier condition of their kinsmen in America, one is astonished in seeing that slavery has produced so totally different results. Two different passions have been the cause of the adoption of slavery; the idleness and profligacy of the Mussulman in the one case, and the money-making mania of the Anglo-American in the other. But this difference which exists in the causes of the adoption of slavery, has also brought about different results; and while the Turkish negro turned into a tool proper to support the luxurious life of his master is doomed to perish, the American negro being made an agent of cultivation and industry, prospers, and his progeny multiplies.

Under the pressure of a common bondage the negroes of Stamboul have been naturally led to find protection by some sort of aggregation; they have thus organised a brotherhood, which ought rather to be styled *sisterhood*. This brotherhood is not established on the system of centralisation, on the contrary, it consists of a number of lodges placed under the authority of so many chiefs. The chief of a lodge is called *Col-bashi* (chief of the band): the *Col-bashi* is elected by the members constituting the lodge.

The object of the lodges is to afford protection, aid and refuge to the slaves when in want, to rescue and redeem them from the hands of their proprietors when possible, to claim and defend the rights of free negroes either from their employers or before the tribunals, and lastly, in order to provide a place for general meetings. Every member of the lodge pays a monthly contribution, besides which no one omits bringing to the central dépôt what can be stolen from the white man's house. The different lodges are united by a common alliance.

The *Col-bashi* is a female invested with high authority, her abode is the lodge, and she is constantly waited upon by several of her devoted followers. She disposes of the funds as she pleases; her followers consider it an object of pride to see her dressed most gaudily, having a profusion of pearls and pieces of gold on her head and round her neck. The respect of which the *Col-bashi* is the object is remark-

able ; no negro, whether male or female, will ever talk irreverently of her, and on being summoned before her presence every one of her followers will implicitly obey. A hundred situations would be given up, and many a master would be left without dinner rather than disobey the chief.

What renders the *Col-bashi* sacred in the eyes of the negro is the spiritual character which she is believed to possess. The *Col-bashi* is said to represent a powerful spirit known under the name of *Yavrube* ; she is also said to be intimately connected with all sorts of other spirits ; moreover, the breath of the *Col-bashi* and her power in reading something from the Koran are deemed to be as good panaceas as the prescriptions of the best of physicians. Once or twice a month the whole of the lodge assembles around the *Col-bashi*, there every one appears in his smartest costume, bearer of some offering or other. Seated on the ground the congregation sing African tunes kept up with the accompaniment of the Tarabooka and of the Teff, while clouds of incense and myrrh arise within the precinct of the room. All on a sudden the *Col-bashi* attains a stage of high excitement and frenzy, becomes an incarnation of the spirit *Yavrube*, and is thus transformed into the male element. A supper puts an end to the wild ceremony ; the meal consists of an African dish called *acideh*, and of abundantly distributed sherbets and sweets.

It must be known also that the negroes in Stamboul have got their minstrels, who of course, are not so stylish as those in St. James's Hall. The Stamboul minstrels are poor old men broken to pieces by infirmities, and their evening and morning suits are rags. The way in which these poor fellows gain their livelihood is by singing and playing on the guitar their national airs. It is interesting, and at the same time touching, to see how the negro maids on catching the first notes of their African tunes are electrified, and gather around the musician like so many flies on a sugar-lump.

Having described in a summary manner the condition of the negro slaves in Turkey and through the East, something must be said in conclusion with reference to Sir Samuel Baker's expedition, which is meant to put a stop to the trade in negro slaves. It strikes me, at first sight, that a gigantic undertaking of this nature could not have been commenced with a more ill-conceived plan and with means so totally inadequate as this one has been. After what has already been said in the course of this lecture with regard to the causes of supply and the causes of demand, everyone must admit that on so extended and difficult theatre of operations, it is lost labour to attempt to put a stop to the slave trade with the five or even ten thousand men which may be expected from the Khedive.

Notwithstanding Sir Samuel Baker's earnest efforts, the negro chief will not cease from packing off his slaves to Cairo or Stamboul, nor will the Turk and the Egyptian fear to rush on the prey. What must inevitably happen is this ; the commander of the expedition, placed between two fires, supply and demand, will have the mortification of seeing his plans defeated by both. And what if the very soldiers and officers who are to execute his orders, betray him by play-

ing into the hands of those in the rear and those in the front? The surprise would be rather agreeable, but everything ought to be foreseen when dealing with Orientals. Supposing, however, that Sir Samuel's zeal is fully shared by his subordinates, even then the chances of success are few; as not five thousand, nor yet two hundred thousand men, would be sufficient to keep up a vigilant cordon in face of enemies who are everywhere and nowhere. A faint check is the result to be expected; as for the sanguine hope of extirpating the evil, it is delusion to cherish it, as neither the Egyptians nor the Turks, neither the Khedive nor the Sultan, ever thought of doing away with the state of things which suits them so well. It is only by policy in order to gain the sympathy of European nations, and particularly that of Englishmen, that Sir Samuel Baker's humanitarian scheme is ostensibly encouraged; in reality however they undermine it.

If the Sultan and the Khedive really mean what they say and intend doing away with slavery, the thing is very easy: they will have no law or firman to write, no troops to dispatch, no Samuel Baker to employ. Let them merely open wide and large the gates of their harems, let them turn out the hundreds of women and eunuchs they shut up, the whole scaffolding of slavery will then crumble down. This is the only feasible plan through which the calculations of sellers and buyers of human flesh can be effectually thwarted. Mussulman society as well as its rulers shrink, however, from sweeping measures of the sort, but they must be aware that through craft it is not possible to avoid the penalty which Providence inflicts on slave-holding nations. There is no escape between the two alternatives; Turks and Egyptians must either make an atonement by emancipating their slaves, and follow thus the example given by Russia, or they must await to be crushed as the Confederates of America and the Circassians have been, and then only the rights of humanity will be avenged.

In the discussion which ensued, the following took part:—Mr. de Meschin, Mr. A. L. Lewis, Mr. C. Staniland Wake, Dr. Seemann, Sir Richard Hanson, Dr. R. King, Mr. J. F. V. Fitzgerald, Mr. Edward Wade, Mr. Charlesworth, Dr. Ioannides, and the Chairman.

The Meeting then adjourned.

FEBRUARY 15TH, 1870.

DR. BERTHOLD SEEMANN, V.P., IN THE CHAIR.

THE minutes of the previous meeting were confirmed.

C. W. Eddy, Esq., M.A., 24, Abingdon Street, S.W., and E. Shiemann, Esq., 47, Gerrard Street, Soho, were elected Fellows.

The following presents were announced, and thanks were voted for the same :

FOR THE LIBRARY.

From the AUTHOR.—*Antropologia dell' Etruria*. By Dr. G. Nicolucci.

From the ROYAL INSTITUTE OF PALERMO.—*Giornale di Scienze Naturali ed Economiche*, 1869.

From the SOCIETY.—*Journal of the Ethnological Society of London*, No. 4.

From the SOCIETY.—*Mémoires de la Société Royale des Antiquaires du Nord*, 1868.

From Professor STEENSTRUP.—*Oversigt over det Kongelige danske Videnskabernes Selskabs*, Copenhagen, No. 5, 1868 ; No. 2, 1869.

From the SOCIETY.—*Proceedings of the Royal Society*, No. 186.

From Dr. E. T. RYAN TENISON.—*The British Medical Journal*, to date.

From the AUTHORS.—*Life and Sport in South-eastern Africa*. By Chas. Hamilton, Esq., and F. G. H. Price, Esq.

A paper by Mr. E. A. Welch and Dr. Barnard Davis, F.R.S., was read as follows :

An Account of the Chatham Islands, their Discovery, Inhabitants, Conquest by the Maories, and the Fate of the Aborigines.

The Chatham Islands were discovered, about the year 1792, by Lieut. Broughton, one of the expedition under the celebrated Vancouver, and consist of the Great or Chatham Island (Whare-kauri), Pitt's Island (Rangiourea), South-east Island (Rangitira), and several outlying rocks, some of which are dignified with the name of islands, but there is neither timber nor bush growing on them. The islands are situated near the forty-fourth degree of south latitude, and about 176° west of Greenwich, or about four hundred and seventy miles east of New Zealand.

At the time of the discovery of the Chatham Islands, they were inhabited by a peaceful, harmless, and inoffensive people, who were then supposed to be identical with the natives of New Zealand, or Maories. Such is what I have been informed, as I have never seen any account of the discovery, and, of course, there is no early information concerning the natives to speak of, except what is gleaned from themselves and the earliest residents among them. These people—*i.e.*, the aborigines of these islands—are called *Morioris*, a title, I believe, bestowed on them by the Maories. They appear, from the evidence of a white man named "Coffee", who lived amongst them some years before the conquest of the islands by the Maories, to have been a simple, harmless race of people, living in the most primitive style, without any fixed residence, and without huts or dwelling places, except of the most frail description—these consisting of two poles

stuck in the ground, and a cross-piece from one to the other, against which a few branches of trees were placed in a sloping position, with some flax-leaves to form a shelter. These were their only dwelling places, and were mostly at the outskirts of the bush, where the surrounding timber sufficed to break the wind, and shelter them a little from the rain. These huts were used for a day or two, as they wandered about from place to place, wherever food was most abundant.

Their only garments were flax-leaves plaited or woven into mats, and worn round the loins. They were idle in the extreme, only seeking food when pressed by hunger, and depending mostly on what was cast ashore by the sea—a stranded whale, grampus, or porpoise being an especial delicacy, as was also a seal or mass of whale blubber, which being often cast ashore was looked upon as the gift of a good spirit who supplied their wants. Having no land animals, they depended upon such means and the abundance of shell-fish for their subsistence: their food consisting almost entirely of the delicacies above enumerated, the mutton-fish, Pawa (*Haliotis*), the Pipi, a delicate white bivalve, much esteemed by Europeans, several of the Echinidae, sea crayfish, eels, and other fish, and a peculiar fish, zoophyte, or marine animal, called “Kaio” by the aborigines, but named by Europeans sea tulip. Their vegetable food consisted of the root of *Pteris esculenta*, which was generally dried in the sun and roasted; the stems of the Mamaku tree-fern were eaten in the same way, and also the pith of the Punga punga tree-fern, and the heart-leaves of the *Areca sapida*. But the most peculiar part of their vegetable diet was the fruit of the Karaka tree called Kopi. This fruit, when ripe, has very much the appearance of a small apricot, and is similar in taste, but much stronger. After the fleshy pulp is removed, there remains a stone with a thin shell, containing a kernel. This forms the edible part, and the method of its preparation is as ingenious as the South American mode of preparing cassava from the root of the *Jatropha manihot*. It is first roasted in a kopra, or oven, which is simply a hole made in the ground, in which a fire is kindled. When the fire has burnt to a mass of red coals, a quantity of stones are thrown in and allowed to get hot. These are then covered with green leaves, and the kopi nuts are thrown in; a fresh quantity of leaves are then placed on the top of them, some water poured in, and the whole is then covered up with earth and allowed to remain some time. When the nuts are uncovered they are cooked, and are ready to undergo the next process, which consists in putting them into a suitable receptacle and placing them in a running stream, where they are allowed to remain for at least three weeks, at the end of which time they are considered fit to eat. They have then a striking resemblance in odour to the spent bark usually thrown out of a tanner’s yard. If these nuts should be eaten raw, they are poisonous, and cause death; and even if eaten after the first part of their preparation serious illness is a certain result. I have seen one poor fellow at Matarako, on the east side of the island, who had lost the use of his limbs entirely from paralysis caused by eating kopi nuts after they had been cooked, but prior to their being steeped in running water.

Though the Morioris are destitute of any chronological knowledge, they have a tradition of their ancestors having come to the islands in two canoes, but are totally unable to fix even approximately the date of such arrival: they cannot surmise how many generations have lived and died since that time, nor have they any means of counting days or years, or of conveying any correct idea whether an event occurred twenty years or only a week ago. They say that one of these canoes was preserved for a long time, and the other was blown out to sea; but they do not know what their form was, and have no idea of boats or canoes except their own wretched crafts, composed of the flower stalks of *Phormium tenax* made basket-like, and tied together with strips of the leaf and young karreao, or supple-jack vines. These frail rafts were filled in the lower part with kelp, or bladder wrack, and other floating sea-weeds, which gave them sufficient buoyancy to enable them to be taken a little way out to sea and on the lakes to fish; and some of the fishermen would often sit in one of these frail barks up to his knees in rotten sea-weed, as they never took out the first lot put in, but continued to heap in fresh quantities in order to keep up the floating powers of this primitive ship. Probably the want of timber suitable for the purpose prevented their making canoes of a more substantial nature, as they possessed stone axes like the New Zealanders. The operation of felling a tree was, however, a considerable undertaking, involving, according to their accounts, a month's labour; and probably this prevented their making wood rafts, which would have been infinitely more safe, and as easily propelled with the same means as they propelled their flax rafts—namely, with a paddle of wood shaped like a spade, and used at the stern. There may possibly be some truth in their tradition as to the way in which their ancestors arrived at the Chatham Islands; for a tradition of a similar nature is told by the Maories of the way in which their ancestors arrived at New Zealand from Hawaiki. Still it has been supposed by some that the Morioris were the original inhabitants of New Zealand, and were driven from that country by their Maori conquerors.

The Morioris appear to have been a cheerful, good-tempered race of people, fond of singing and telling stories, and ardent believers in spirits, both good and evil. They believed that all food was given them by a good spirit named Atua, which is the Maori word for God, though they do not appear to have believed in the existence of a God in the sense that we do. Nevertheless, they evidently entertained a belief in a future state, as, when one of their number died, it was believed that his spirit would descend into the sea and send them some large fish ashore, and after a death they usually made fires on the sea-beach, and watched anxiously, day and night, for the expected gift. Even their conquest by the Maories, their assimilation to the habits and manners of the latter, and their intercourse with Europeans, have failed to shake this belief, as, in September 1867, one of the oldest of their people died at Waikarapi, four miles from the settlement of Waitangi, and was buried near his hut, and it was believed that when his spirit descended into the sea he would send them some large fish ashore. So strong was the impression, that fires were

lighted on the beach, and they watched day and night for four days, when a large grampus was cast ashore within half a mile of the old man's whare, and a general rejoicing followed to celebrate the event. Their belief in evil spirits was, I rather think, confined to the idea that, after the death of one of their number, an evil spirit came to carry away the soul of the deceased, and, in order to prevent such an occurrence, a fire was usually lighted, round which they ranged themselves, each holding a stick, tied to which was a bunch of spear-grass (*Gingidium Dieffenbachii*), meantime chanting a monotonous song. This was supposed to keep away all evil spirits, and was an invariable occurrence on the death of one of their tribe. This ceremony has died out from amongst them now, and when one dies they usually hold a tangi or wail for the dead, in the same way as the Maories.

Their language was, or is believed to have been, a dialect of the Maori language, or one so near to it as to have become easily assimilated to it, as at the present time there is no appreciable difference between them. But it is not at all improbable that theirs was a separate language, and that the slaughter of the greater portion of them, and the slavery to which the rest were condemned, may have obliterated their language entirely, and compelled them to use the Maori tongue, as being most intelligible to their masters. The Morioris do not appear to have had any hereditary chiefs or leaders. From what I have been able to learn from them, it appears that their usual method was to elect such as were considered the most useful. Thus any one who was distinguished for stature or prowess, or was a successful bird-catcher or fisher, was usually chosen as a leader, but did not possess more than ordinary power, being simply looked upon as a leader or judge. War was an art they did not understand, and, therefore, they did not require a chief to lead them in battle. Quarrels were very rare, and generally resulted from such an occurrence as appropriating a seal, porpoise, or mass of whale blubber, or such delicacies, that were the property of another. A fight generally ensued between the two parties, in which, it is said, they used wooden clubs and spears, or their stone axes, and whoever first drew blood was considered the victor, and the affair ended. This is a pleasing contrast with their conquerors, the Maoris, who seem to be never so happy as when engaged in a war. I have never seen any weapons amongst the Morioris; nor, indeed, have any of the oldest white settlers on the islands. Probably what weapons they possessed were taken from them at their conquest, and destroyed by the destroyers of the Morioris.

Their method of disposing of the dead was peculiar, and had special reference to the avocations of the deceased. Thus, a successful fisherman would be lashed to one of the frail rafts before alluded to, a baited line put into his hand, and the boat sent to sea with its curious freight. A bird-catcher would be lashed to some tree facing a spot where he had been more than usually successful, and left there, or placed upright in the hollow of a tree. Women, and those of no particular merit as sportsmen, were generally taken to some sandhill overlooking the sea, where a hole was made, into which the body was

put doubled up, so that the chin rested on the knees, and the head was always left above the surface of the ground—a style of burial that I have not heard of being practised by any other people.

They have been thought by many people to be a tribe of Maories; but, from what has been said, it will be seen that their manners and customs differ very materially from those of the Maories in nearly everything, and, apart from this, there is a great deal of physical difference between the two races. The Morioris are shorter, stouter, and more pleasing in expression than the Maoris; they are darker in colour, have the same lank black hair, have aquiline noses, and a Jewish cast of countenance, and do not tattoo themselves. The difference between them is so marked that one Moriori may be easily picked out from a hundred, or an indefinite number of Maories. The latter people know well the difference, and know them to be a different race, speaking of them with contempt as “black fellows”. It is said that they originally practised cannibalism, but had discontinued the practice before the arrival of the Maories.

The conquest, or rather the slaughter, of the Morioris took place about the year 1835. Some authorities have stated that the expedition to the Chatham Islands was undertaken for the purpose of a raid on these islands. The true state of the case stands thus. For some years previous to the year 1835, the Ngatimutunga tribe in Taranaki were continually harassed by a powerful chief of a neighbouring tribe, named Raupahara, and were decreasing very fast, being unable to withstand the continual assaults of this powerful chief. They had recourse to a system of emigration; and a number of the tribe, under the leadership of Pomare, their chief, chartered an English brig, the *Rodney*, to convey them to Whare-kauri, the Chatham Island, they having given it that name on hearing of it from one of their countrymen who had been there, and carried a good account of it to the natives of Taranaki. Accordingly they arrived there, and landed at Wangaroa, the *Rodney* immediately setting sail after landing her passengers. Here I may mention that the Maories, after landing, began to feel that there was a considerable difference between New Zealand and Whare-kauri, and that the latter lacked many of the advantages of the former. The absence of land animals, to which they had been accustomed, made animal food a delicacy. It is probable that this was the cause of the commencement of these cannibal orgies that so nearly depopulated the islands. Certain it is that once having begun, they carried their horrid practices to such an extent as almost to exterminate the original inhabitants. The usual way in which these feasts were conducted was to select a certain number of victims, who were made to carry the wood, light the fires, and dig the Koprass in which they were to be cooked, and make all ready for the feast. They were then laid in rows on the ground, and killed by a few blows on the head with a “mere” by one of the chief men present. At this day, the remains of these cannibal feasts are to be seen in every part of the island. At Tupuangi, on the western side of the island, there are hundreds of the skeletons of these unfortunate wretches lying near the sea-side, where the feasts took place.

At Okawa, on the north-east side, there are also a great many, this likewise being one of the chief scenes of their cannibal festivities. And even in the most secluded spots you frequently come upon the bones of some unfortunate victim: the larger bones broken to extract the marrow, and the skull also broken to get at the brain.

The Morioris say that, prior to the coming of the Maories, their people were as numerous as the flax-stalks, and that, notwithstanding their great number, there was never any lack of the necessaries of life, as there was scarcely a day but what some large fish or mass of whale-blubber was cast on the sea-beach, and furnished them with an unlimited supply of food; but that, after their conquest by the Maories, and the introduction by them of the potato and other vegetables, and land animals, as pigs, sheep, cattle, and other domestic animals, they have had to work for their food, and that the former supplies have gradually failed and become less every year. This method of enumerating their people is very similar to the American Indian saying, "numerous as the leaves of the forest", as indicating a number beyond their comprehension, and conveys no accurate idea of what their numbers were. However, there is no doubt that they were very numerous for the area of the islands. The number of skulls that are to be found in certain parts goes far to prove this fact; but, owing to the causes before mentioned, they have dwindled down to a very limited number, and at the present time do not exceed eighty or ninety altogether. Those who were saved from the general slaughter were held as slaves by their conquerors, and, being debarred the privilege of intermarrying, they have not increased since, and are becoming fewer every year, and in a few years may be expected to become totally extinct. During my residence on the islands, I was fortunate enough to procure a few skulls and an imperfect skeleton of the Moriori race, which I brought to England for anthropological purposes. These are now in the valuable collection of Dr. J. Barnard Davis, F.R.S., and are, I believe, the only authentic ones ever brought to this country.

From what I have been able to learn, the Morioris appear to have suffered from but few diseases; the commonest being a pulmonary affection called "mare-mare", and diarrhoea, "tiko-tiko". They were also troubled with a virulent form of scabies, called "haki-haki" or "turotiti", which is a really loathsome disease, aggravated very much by the determined scratching which they persisted in to allay the intolerable itching. During my residence amongst them, I was particularly successful in the treatment of this disease; and it was a common saying with them "*Taguta kipini te Atua*," which means "Doctor all the same as God."* Since the Maories and white men have been amongst them, they have, however, been subject to other diseases, some of which, particularly the measles, have been very fatal to them,

* The mode of treatment was by an ointment of sulphur, in the making of which a solution of corrosive sublimate was stirred before it cooled, telling them to wash frequently, and keep themselves clean. At the same time, a little Plummer's pill or antimonial powder was taken internally.

as also to the Maories.* With these few exceptions, I believe the Morioris to have been a fine healthy race of people.

They have been said by some people to bear a strong resemblance to the Stewart's Island Maories; but I think this is without foundation, as is also their fancied resemblance to the generality of the Kanakas.

There are many other interesting incidents connected with these islands; but they refer only to the Maories and white settlers, and not to the aborigines, and will not, therefore, prove of any great or special interest to you.

At the present time, the islands are inhabited by as varied and motley an assemblage of people as can well be imagined. There are Morioris, Maories, Kanakas, Negroes, Chinese, Spaniards, Portuguese, Danes, Germans, English, Irish, Scotch, Welsh, Yankees, natives of South America, a Manilla native, a Laplander, a Russian Finn, a half-caste native of New Holland, several Maori half-castes,† and a few whose nationality it is almost impossible to determine, forming as curious a mixture of races as could possibly be got together in such a small aggregate number.

Notes on the above, by J. BARNARD DAVIS, M.D., F.R.S.—It appears to have been on the 23rd of November, 1791, that Lieut. Broughton, the companion of Vancouver, discovered the Chatham Islands. His visit was attended with fatal consequences to the natives.

There may be some doubt whether at that time—or, at least, at the place at the north at which he touched, and which he named Scaramouch Bay—they might not have had canoes; for Broughton describes their vessels as frail barks, of eight or nine feet long, two or three wide, and two deep, with flat bottoms, and constructed of wood so light that two men could easily carry one of them on their shoulders. But it is more likely that Broughton really meant to describe the frail flax-rafts of Mr. Welch, which are irregular in form, sometimes almost square, at others rounded, and about two feet deep. The dimensions of those of the latter agree with Broughton's description, and they were remarkably buoyant, as Mr. Welch observes. He also adds: "There is no timber growing on the islands large enough to make boats of. There is a total absence of conifers, and the wood is generally of a dense, heavy character. The karaka, the largest, is said to be wholly useless for any such purpose." Broughton states that each canoe could only hold two or three persons.

The forest, on landing, was free from undergrowth, yet the trees were not large. The natives saluted in the New Zealand manner by rubbing noses, "hongi". They had stone weapons, like those of the Maoris, which they concealed by wrapping them up in a mat, and lances from six to ten feet long, two of which were carved on the

* I never saw a case of syphilis or gonorrhœa among the Morioris; but have treated both in Maories.

† The half-castes were European and Maori, with one exception, that being a Maori and Moriori. These half-castes are a fine, strong, healthy people, fertile when intermarried with one another and with both Europeans and Maories, and are on the increase.

shafts. Broughton speaks of the water on the island as being of a reddish colour and of a salt taste. Fourteen natives accompanied him along the shore, but his efforts to attain to a friendly intercourse with them were unavailing. At length, a young man advanced towards him with hideous grimaces, in a threatening and ferocious manner ; but was arrested by Broughton's pointing his gun at the native's head. The native party then began the attack, when the Lieutenant fired a gun, loaded with shot, at them, with a view to deter them, and thus to enable the English to regain their boat. The blow of a heavy club knocked Mr. John Stone's musket out of his hands, which he recovered, and fired at the native who struck the blow. A marine and a sailor near were also compelled to fire, from the imminent danger to which they were exposed ; next the officer in the boat fired, when the natives retreated. Lieut. Broughton was much pleased to see them run away ; but had the mortification afterwards to find one man dead from a bullet wound through his heart, and to hear another lamenting, in a tone like howling, from the pain of his wounds.

The English saw no appearance of dwellings. Broughton describes the natives thus. The men were of middle stature, with their limbs full and robust. Their hair and beards were black, and some wore them long. The youths had their hair tied in knots on the top of the head, and intermixed with black and white feathers. Some among them had extirpated their beards. They all have a dark brown tint, with decided features and bad teeth. Their skins showed no signs of tattooing, and they seemed very clean. For clothing, they had the skin of a bear (?) or a seal attached round the neck by a netted cord, which fell down to the hips, with the hair outwards. Others had, in place of these skins, mats made very artistically, attached in the same manner, which covered their shoulders and backs. Some were naked, with the exception of a fine netted tissue, worn as a cord round the loins. We did not observe their ears to be pierced, nor that they wore ornaments on their persons, except some who had a necklace of mother-of-pearl. Many had their lines, which were made of the same substance as their nets, passed round the body like a belt, but we did not see their hooks. We distinguished two or three old men, who, nevertheless, did not seem to be clothed with any authority. All indicated much gaiety, and our conversation frequently excited bursts of laughter among them. It is difficult to give any idea of their surprise, and of their exclamations, when we landed. They pointed with their fingers to the sun and then to us, as if to inquire whether we had come down from it."

It will be seen that Broughton not only speaks of their stone weapons, but says they were like those of the Maories of New Zealand. Those stone implements that have been brought by Mr. Welch do not seem to be of the same pattern as those of the Maories. They are made of a very hard dark stone, which has a loud clinking resonance, yet is not so hard as the jade employed by the Maories. They appear to have been of the adze kind, and bear perfect cutting edges, which are remarkable for the obtuse angle at which they are

formed. They are now only to be found in the woods, and are very scarce, iron being of universal use at the present time.

The osseous relics of Morioris brought to England by Mr. Welch consist of three calvaria, two of men and one of a girl, two lower jaws, and most of the bones of a skeleton of a woman, except those of the head, viz., twenty-four vertebræ, pelvis complete, two scapulæ, two claviculæ, two humeri, two ulnæ, two radii, twenty-four ribs, two sterna, two femora, two tibiæ, two fibulæ, two patellæ, the bones of the carpus, metacarpus, and the phalanges of the fingers, some of them in duplicate, and the bones of the tarsus, metatarsus, and the phalanges of the toes, some of these also in duplicate.

No. 1598.—Calvarium of a man aged about 35. Has been exposed to the weather; is thick, small, and rugged, with a much depressed frontal; each limb of the lambdoidal suture is remarkably complicated in its denticulations. There is a round hole, which admits the tip of the little finger, through the anterior wall of the left superior maxillary into the antrum of that side. This orifice is quite regular, has its edges smooth, and no doubt existed in life. It is most likely the result of some serious injury. The teeth present a very unusual appearance of detrition. The third molars are absent, and seem to have been lost in early life; the two others are present on both sides, but are worn into the dentine. From the anterior edge of the first true molar on each side, the teeth before this point are worn down rapidly in a plane or curved line, which descends (really as the natural position of the head ascends) to the alveoli of the middle incisors, which are wanting. It is difficult to conceive how by any use all the anterior teeth could be worn away in such a manner—i. e., sloping upwards from the first molars to a point on the surface of the alveoli of the middle incisors. The only similar cases that I am aware of are in the crania of "Giggeragou," an aged Maori chief (*Thesaurus Craniorum*, No. 156, p. 316), and another large Maori skull (*ib.*, No. 809), which possess the lower jaws, exhibiting the front teeth worn in a line which ascends upwards to the median point, so as to correspond with the wearing away of the upper teeth. It may be reasonably inferred that this peculiar mode of detrition of the teeth depends upon a special kind of food indigenous to both New Zealand and to the Chatham Islands—perhaps the roots and stems of the fronds of the tree-fern. It will be recollected that Broughton mentions the bad state of the teeth of the natives. Nasals are very prominent and aquiline in form.

No. 1608.—Calvarium of a man aged about 30. Is rather fuller and less rugged; still thick and bony, and has also been exposed to the weather. Exhibits a similar depression of the frontal. The sagittal suture is quite obliterated by ossification, and all the middle part of the lambdoidal nearly so. Nasals broken away. The molars and premolars are worn down into the dentine. Front teeth missing.

No. 1599.—Imperfect calvarium of a girl of about 10 years of age. This calvarium, which wants all the bones of the face, has a square opening on the left side, from the loss of a large piece of the lower posterior angle of the left parietal, no doubt the death-blow of the

child, and the absence of the sphenoid and ethmoid bones, which have been broken away to get at the brain for cannibal purposes. This calvarium was taken from one of the ovens in which the Maories cooked their victims on their invasion of the islands. It is very brachycephalic, and remarkable for the extreme width between the parietal tubers, which gives the norma verticalis a hexagonal form. The cephalic indices of these skulls are respectively—No. 1598, .74; No. 1608, .74; and No. 1599, .87. The internal capacities of the first two are expressed by 72 oz. and 76.5 oz. of sand. These are respectively equal to 87.5 and 93 cubic inches, which yield 44.2 oz. and 47.1 oz. for the weight of brain contained in each of the two skulls, the mean of which is 45.6 oz. This is very near to the average weight among male Maories, and among Oceanic races in general, of both sexes.

No. 1598A is a large heavy lower jaw, with the full complement of teeth. The wisdom teeth are not worn: hence it may be concluded that the man was not much more than 20. Still, the first molars are worn deep into the dentine, especially on the outer side; indeed, such is the case with all the teeth from the third molars forward, only not in such a great degree as the first true molars.

No. 1599A.—A smaller lower jaw of, perhaps, a woman of about the same age as No. 1598A, the teeth exhibiting exactly the same deterioration, in the same order.

No. 1610†.—Bones of an adult woman's skeleton. Some of the dimensions of these may be given; and, for comparison, I will add the lengths of the same bones in an Aïno woman (No. 1456†) and an Australian woman (No. 1261†), the former being distinguished by the letter A, the latter by B. The length of the humerus is 11.5 inches, and it presents the olecranal foramen (A, 11.3 in., B, 12 in.); of the ulna, 9.6 in. (A, 9.4 in., B, 9.6 in.); of the radius, 8.9 in. (A, 8.5 in., B, 8.9 in.); of the femur, 15.5 in. (A, 16.3 in., B, 16.3 in.); of the tibia, 12.5 in. (A, 12.7 in., B, 13.9 in.); of the fibula, 12 in. (A, 12.7 in., B, 13.1 in.). The latter measures show the unusual shortness of the lower extremities of the Moriori woman. All these long bones are not quite so robust, particularly the humerus, as the corresponding ones in the skeleton of the Aïno woman; and, likewise, they are all rather more robust, again particularly the humerus, than those of the Australian woman. The tibiæ present the sabre form in some degree, or are somewhat platynemic.

It should be noticed that these bones agree in all respects with the account given by Mr. Welch of the singular mode of burial adopted by the Morioris. The skulls have been bleached by exposure to the weather; so also have the bones entering into the formation of the knee-joints, including the patellæ. These parts have not been covered when the body has been bent up and placed in the grave. The other portions of the bones are of a deeper colour, from the sandy soil with which they have been covered.

According to the ratio deduced by Professor Humphry, from twenty-five European skeletons of men and women, that a femur of 17.88 in. infers a skeleton of 65 in., or 5 ft. 5 in. in height, the stature of

this woman would have been about 56·3 in., or 4 ft. 8·3 in. Both in the robustness of the bones and in stature, all this agrees closely with what has been said respecting the natives of Chatham Island. Broughton stated that the men were of middle stature, with their limbs plump. Mr. W. Travers says that "they are much shorter, but stouter built than the New Zealanders."* Mr. Welch's testimony is, that the Morioris are shorter and stouter than the Maories. We thus arrive at decided physical differences between the two races; and, according to the evidence of Mr. Welch, there are striking moral differences also. It is a similar case to that of the Australians and Tasmanians, two races which have been so frequently confounded by superficial and prepossessed observers. In confirmation of the opinion upon this latter subject expressed in the *Thesaurus Craniorum* (p. 271), that of an accurate and unexceptional observer may be quoted. Professor Huxley, in his address to the International Congress at Norwich, in 1868, said: "You do not find that kind of man (his "Australoid") in Van Diemen's Land, which is only one hundred and twenty miles off. It has been my fortune to visit that part of the world, and I can speak of my own knowledge that that type is not to be found there. . . . In Tasmania, the people are totally different from the Australians."

Mr. Welch affirms the hair of the Morioris to be black; in some cases curly, but in the majority straight and coarse. The colour of the skin is No. 42 or No. 43 of Broca's "Tableau Chromatique." That of the eyes No. 1 or No. 2, the albugineæ being yellow.

Thanks to the authors having been given,

Dr. CHARNOCK said Broughton, who discovered the Islands in 1791, estimated the inhabitants at 1,200. The N. Zealanders located there are said to number 800. Dieffenbach thought that in 1840 there were not more than 90 of the original inhabitants. Had the population dwindled down from 1200, or from 400? Hale (in 1846) states that his information concerning the islands was derived from a sailor at the Bay of Islands who had lived some time at the former. This sailor stated that the people had a tradition that their ancestors were from the N.E. Cape of N. Zealand, and that the date of their arrival was about 90 years previously. Such information could only have been acquired by an intimate knowledge of their language, and yet no vocabulary was found in Hale's work. The same was also wanting in the paper. Now, although there was a considerable resemblance between all the Polynesian dialects, there was not much in common between the geographical names in the Chatham Islands and those in any other part of Polynesia. There is *wai* for "water," which is found in all the Polynesian languages, and the name Pohanta, a harbour of the Isles, might be connected with the Sandwich word *puuhonua*, a "place of refuge." Most of the other names agreed with those in the northern island of N. Zealand and the Bay of Islands. Thus, in the Islands are Warekauri and Warearoa, and other names commencing with *ware*, *wai*, *wanga*,

* *Transactions of the Ethnological Society*, vol. iv, p. 354. This paper is much defaced by misprints. Pitt's Island is everywhere named "Pell's" Island.

as Wangatchi, Wangamoe, etc. In N. Zealand are bays called Waingaroa, Wangura, Wangari; rivers named Wangari and Waikare, and a lake Waikari. The N. Z. *waikare* signified "clear water," *waikeri* a river. Waitanga is the name of a bay in the Isles, and Waitangi of a place in N. Zealand, signifying "noisy water," from *wai* and *tangi*; whence probably the *tanga* or wail for the dead mentioned by the author of the paper. One of the Islands (a mere rock), Ranga Tira, would, in the New Zealand language, translate the "gentleman," whilst Rangitulah, or "the sisters", would seem to be compounded of *tuavahine*, a sister.

Mr. RALPH TATE read a description of an inscribed rock on the banks of the Iguana, a tributary of the Orinoco, in Venezuela. This rock presented an incised marking which the author considered to be more ancient than the present inhabitants of the district.

A paper by JAMES CAMPBELL, Esq., M.D., was read "On Polygamy: its Influence in determining the Sex of our Race and its Effects on the Growth of Population." The author, who had been many years resident in Siam, gave minute details of the relative proportions of female to male births in the harems of the king and other important Siamese dignitaries. The result seemed to be that the proportions of males and females born were, as the case of Monogamist marriages, entirely equal. (The paper will appear at length in the *Memoirs*).

Dr. CHARNOCK thought the gist of the paper might have been founded on a mistake. He understood the author to say that there was a general impression that polygamy in the East gave rise to an excess in female births. This supposition might have arisen through a statement in one of the Cyclopædias—upon the authority of Montesquieu—that polygamy, in the East, was the *consequence* of the greater number of female births. The word "consequence" was frequently used in a very loose manner. The meaning here must be that polygamy was caused by the fact that in the East there were more females born than males; and this is what Montesquieu (who did not use the word "consequence") really stated. The truth of this could not be doubted, and on this account Bruce justified polygamy in the East. It was a known fact that in Japan there were born considerably more females than males; and Montesquieu states that in Bantam there were ten women to one man. This might be over-rated, but it was founded upon a statement made in a Collection of Voyages for the establishment of an East India Company. On the other hand, in the cold climates of Asia there were more males born than females, and polyandry was the consequence.

The following also took part in the discussion on the above papers, Dr. Richard King, Mr. Borwick, Dr. Carter Blake, Mr. Charlesworth, Mr. Lewis, and the Chairman.

MARCH 1st, 1870.

DR. BEIGEL, V.P., IN THE CHAIR.

THE minutes of the previous meeting were read and confirmed.

New Fellows were announced, viz. :—Robert Wright, Esq., Oak House, Arlington, Sussex ; R. Harvey Hilliard, Esq., M.D., 258, Kingsland Road, N.E., and Kinsembo, West Africa.

The following presents were announced, and the thanks of the meeting were voted for the same :—

FOR THE LIBRARY.

From the SOCIETY.—Bulletins de la Société d'Anthropologie de Paris, 3rd fasc. Avril à Mai, 1869.

From the SOCIETY.—Transactions of the Social Science Association, 1869.

From the AUTHORS.—Matériaux pour l'Histoire primitive et naturelle de l'Homme, 2e Série. Nos. 1, 11, and 12.—MM. Trutat et Cartailhac.

FOR THE MUSEUM.

From Dr. KOPERNICKY.—Five photographic portraits of Scoptsi.

Mr. EDWARD CHARLESWORTH exhibited some remarkable flint implements from Honduras.

Dr. CHARNOCK wished to know whether Mr. Charlesworth had any evidence of the antiquity of these stone implements. They looked rather modern.

Major FREDERICK MILLINGEN read a paper as follows :—

"The Circassian Slaves and the Sultan's Harem."

THOUGH slavery was a custom universally practised amongst white races long before the Mussulman era, yet Mussulmanism through its conquests has greatly contributed to the spreading and maintenance of such a social evil. The main cause of this, as I have already exposed in a preceding paper, is unquestionably the fact of Mohammed establishing slavery as a reward for the valour of his warriors. On reading the accounts which history gives of the various Mohammedan conquerors, we see that the spreading of their power led either to the conditional subjugation or to the captivity of the conquered races. Many of the countries in the south of Europe have for centuries been exposed to the invasions of the Moors and of the Turks, and the reminiscences of the scourge inflicted by those hordes live up to this day in the traditions of the inhabitants.

When the Ottoman power began its career of conquest, the Turkish hordes fell like a torrent over the provinces of the eastern empire, carrying everything before them, while reducing into captivity the flower of the population. The conquered Byzantin-Greeks were the first to furnish a constant supply of slaves, and swelled the yet thin masses of the victors. At that primitive period the demand for slaves was chiefly for those capable of bearing arms, for the manly Turks were not yet greedy after women and odalisks, differing thus essentially from their present degenerate descendants. With the extension

of the Turkish conquests throughout Europe, Asia, and Africa, new fields were opened up for the supply of slaves, the invasion or subjugation of a new country yielding to the conquerors a fresh contingent of slaves who were merged into the mass of the followers of the Crescent. It was in this way that the wars carried on by the Turks in Hungary, Croatia, and in the hereditary states of Austria afforded them fine opportunities of recruiting their *ortas* (legions) and their harems with chosen specimens of the Hungarian, Sclavonian, and German races. While these exploits were being achieved by land, the galleys and piratical vessels of the Turks spread terror all along the shores of the Mediterranean, destroying all traces of prosperity, and reducing the inhabitants into captivity. The Armenians, the Georgians, the Circassians, as well as the rest of the unbelieving nationalities of Asia, underwent a similar fate at the hands of their Mussulman aggressors.

The Turks having been driven back and a reaction set in, they sank into depravity, and slaves possessed no other value than that of vile agents of profligacy. By narrowing the Ottoman power, the limits also of the supply of slaves were naturally restricted, the conquests of Austria and Russia depriving the Turks of their European sources. Georgia and Circassia continued, however, to furnish them for a long period yet with a select stock of beauties and domestics, the former of the two countries having always been held in high repute on account of its products. *Gurgji guzeli*, the beauty of the Georgian, was highly thought of by connoisseurs; and the imperial harem, as well as those of the grandes throughout the empire, were chiefly provided with the fair ones of Georgia. The Valideh-Sultan, mother of the late Sultan, was a Georgian slave.

With the appearance of the Russian eagles on this side of the Caucasus, the supply of Georgian slaves diminished considerably; it continued, however, to be carried on through the agency of the Mussulmans of Georgian race, who inhabit the Turkish portion of Gooriel and the Adjara mountains. The Mussulman Beys of these districts are in the habit of making raids on the villages of Georgia and carrying away the inhabitants. In Gooriel, one of the most inveterate dealers in slaves was a woman, named Tintiné Khanam, mother of Hassan and Ali, two Beys of Tchuruksoo. The traffic was carried on by the sons kidnapping girls and boys and delivering them to the mother, who effected their sale by making frequent trips to Constantinople. There Tintineh was most highly connected, and intimate with the Seraglio, as well as with many of the grandes. Through her influence, she succeeded in getting one of her sons made a Pasha, as her son Ali was appointed in 1865 to the government of Keresund on the Black Sea. While the supply from Georgia was declining, the slave trade was carried on on a large scale by the Circassians. Among these mountaineers slavery is based on a totally different system from that existing amongst the blacks of Africa. Supply arises here from causes entirely different. Instead of having its source in feuds and wars, slavery in Circassia is, or rather was, produced by a peaceable process. There every chief or noble had a certain number

of domestic slaves, the offspring of whom served to supply the markets of Turkey. Slaves who happened to become involved tenants, were also packed off and sold at Constantinople. Besides these two kinds of slaves, another description existed, who may be styled volunteer slaves; that is to say, girls brought to the market and sold at their own request and desire. Many girls used to be brought also with the avowed object of giving them to suitors, settling them thus in married life; in this case the husband was required to give a moderate sum as a remuneration due to those who had taken the trouble of bringing the bride to Constantinople.

At the time when the slave trade was briskly carried on between the Circassian coast and the Turkish littoral, small skiffs used to leave on the sly the creeks and bays of Circassia, steering across to Trebizond; from this entrepot the slaves were sent to Constantinople, as well as to the branch establishments of Egypt, Tunis, Morocco, and Persia. That the Circassian girls should have had a sort of frenzy for slavery is easily explained when one considers that, in their eyes Stambul is the promised land where every one of them is to become a Sultana or the wife of a Pasha. While prospects so fascinating incite the slave to offer herself to the market, the profits offered as a reward to the slave dealer serve to give a greater impulse to the development of these transactions. Besides the high prices which he is sure to pocket on landing his merchandise, the expectation of obtaining one day the patronage and bounties of a future Sultana is also within the limits of this trade. The circumstance that in the Circassian slave trade the interest of the slave and slave dealer is combined, offers a striking contrast when compared with the relative position of the Negro slave and his dealer. In the one case the slave is moved by the hope of improving her condition; in the other, she is animated by the fear of having to undergo a life of hard labour. The eagerness with which the Circassian slaves accept serfdom, and the good luck met by some of them, has led to the belief that under such circumstances slavery is far from being a curse; it has even been looked upon as a boon and a blessing. I will demonstrate, however, that such arguments may have the merit of eccentricity, but not surely that of practical and sound reasoning.

With the subjugation of Circassia by the Russians in 1864, assurances were given to the effect that the days of the slave trade were gone by, and that a new state of things was to be inaugurated. It was asserted that henceforward slaves and slave dealers would be compelled to desist from their nefarious practices, and that a new era of civilisation was to follow the lawlessness hitherto prevailing. However, such vaticinations have not been fulfilled. Though the Russian arms have succeeded in driving slave and slave-dealers from their dens, they have failed in making better men of them. In other words, if the Circassians have lost the land of their fathers, they have nevertheless not relinquished their ancient habits of lawlessness and the taste for slave dealing. On the contrary, by immigrating to Turkey, the Circassians have found greater facilities for carrying on operations

of that nature, supply and demand being now within easy reach of each other.

It must be said that at the time when the emigration took place, the Turkish Government promulgated a decree by which slavery was abolished amongst the Circassians, all of whom were henceforward to be recognised as free-born citizens. In spite, however, of these formal orders, many of the high functionaries of the Porte despatched special enissaries to the landing places to select from amongst the emigrants the best specimens of female beauty. Such a golden opportunity for getting cheap slaves was not to be lost, and every one who could, provided himself with a good stock of human merchandise. Since then the trade has continued unabated, as the Circassians established in Rumelia and in the neighbourhood of Brussa are in the habit of forwarding their goods to the Stambul market.

The causes which foment the supply being stated, let us now turn to the causes of demand. If the causes of the demand for Negro slaves have been said to be based on the religious and social system of Islamism, so much more so are the causes which lead to the trade in white slaves. Not only is the use of the Circassian or white slaves a custom inherent in the religious and social system of Mussulman nations, but it constitutes also a state policy, a *raison d'état*, necessary for the maintenance of the reigning dynasty. Let us examine these points in a summary way. Starting from the point that the use of white slaves is inherent in the religious system, I must say that Circassian slaves are indispensable as useful agents in order to keep women in that state of inferiority to which the Koran condemns them. It is easy to understand that if a woman knew that religion and law compel her husband to stick by her she would assert her rights; but this is just what the Koran prevents by allowing the husband to get rid of his wife on the smallest pretence, and making it lawful for him to take into his harem as many substitutes as he may wish. The fear of a new comer serves admirably to keep women (I mean Turkish women) in a state of salutary subjection. It is for this reason, then, that the Circassians either as cheap wives or odalisks are so useful. A Mussulman who wishes to check-mate his wife, or who may desire to indulge in a plurality of wives, would often find difficulties in procuring them amongst his countrywomen. Here the Circassians are of use, as by paying a price for her, she becomes at the shortest notice his property. Besides this, even as wife the Circassian is preferred to the native; the despotic husband prefers to have a wife whom he can keep under complete subjection to his heart's content. The native woman has too many drawbacks about her—father, mother, brothers, etc., who may cause uneasiness to the husband.

As upper domestics in the harem, the Circassians are also indispensable for reasons already stated in my first paper, as that free-born women cannot show their hands and faces while serving the proprietor of the harem—their virtue would be compromised if face or hands were to be seen; the slave is in a quite different position, as, according to the Koran, she has no virtue of her own to protect, that being the lawful property of him who possesses her. As a part of the social

system, slavery is essential. The jealous Mussulman is above all careful that no one should in any way be connected with the inmates of the harem, let them be his wives or attendants. Besides this, Mussulmans think a great deal of buying girls in tender age, with the object of bringing them up and teaching them according to their own notions and fancies. Evidently no one can answer better these objects than a Circassian slave, who, having no one upon earth but her master, gets easily into the groove of his manners, habits, and tastes.

The demand for Circassian slaves arises also, as I have stated, from a state policy which has for object the maintenance of the reigning dynasty. According to the constitution of the Ottoman empire, the Sultan, who is the chief of the State and Vicar of Mohammed, cannot ally himself with any one of his subjects nor with any foreign nation. From where is he then to procure the wives and concubines necessary to fill his harem? With slaves belonging to himself only is he allowed to contract a sort of connection. This rule is also extended to all the princes of the blood, as they are reckoned to be eligible to the throne. The history of the Ottoman empire records only one instance in which a Sultan deviated from this law, and that was when Sultan Orkhan married Theodora, the daughter of Cantacuzène, Emperor of Byzantium. But then the Turkish dynasty was not yet established on a regular footing, and the Sultans had not assumed the title of Vicars of the Prophet. This state reason makes thus of slavery a necessity; and unless a new system is adopted, the imperial customers will always be foremost in the market for Circassian slaves.

Having exposed the causes of supply and demand, I will now describe the way in which this slave business is carried on in Constantinople, where two sets of slave dealers exist—addicted to the trade in Circassian slaves—the professional and the amateur slave dealer. The professionals are generally people of Circassian origin, who, previous to the emigration, used to remain in the quarter of Tophaneh, at that time the general emporium for slaves. Since then, these professional dealers have been scattered all about Stambul, far from the sight of European intruders.

As soon as a fresh arrival of girls takes place at the residence of one of these slave dealers, a number of brokers, generally women, are despatched to the houses of the amateur slave-dealers, who are none else than the grand ladies of the imperial palace and the high aristocracy of Constantinople—the wives of Ali Pasha, Fouad Pasha, Hussein Pasha, and of all the big and small pashas of the empire. These amateur dealers, on receiving the intelligence from the brokers, have either the slaves brought to them or drive in their carriages to the house of the professional slave dealer, and there, after examination, conclude the bargain. The grand lady who has bought the Circassian girl on speculation, takes the slave to her palace, where she is kept three or four years, so as to render her familiar with the Turkish idiom, and teach her the duties of the household; some ladies go even so far as to make the slave girl practise a little on the piano, an acquirement which serves to increase a good deal the price of the merchandise. In order to attract customers, these slave-dealing ladies employ many

dodges; one amongst them is that of driving through the streets of Stambul with their lovely slaves seated before them in the carriage; of course nothing is neglected which can contribute to show the girls to advantage, neither the most fashionable costumes nor the most transparent veils. On driving home, the lady expects to find several customers in attendance waiting to learn the price of her slaves.

This trade is thus carried on by the greatest ladies of Constantinople, many of whom have become rich through it. No speculation could be more profitable than this one. A girl of ten or twelve, bought for two hundred pounds, can be sold at the age of sixteen or seventeen for a thousand. To leave no doubt about the correctness of my statement, I insert here a table of the Circassian slaves sold by a lady of Constantinople, Atidjeh Khanum Effendi, mother of the well-known Riza Bey, formerly Ambassador of the sublime Porte at the Court of Russia, and now Ambassador at Teheran. This list contains the names of the different slaves, as well as of those who bought them, the sums paid, together with the date in which those transactions took place.

NAMES.	SUMS.	DATE.
Djemalifer, sold to Ilamih Pasha.....	1000	1859
Ainifer, sold to an Egyptian Bey.....	750	1859
Andelib, sold to Rifaat Pasha	650	1862
Frenkistu, sold to a Bey.....	770	1862
Dilber, sold.....	190	1866
Aftab, to Mahmud Pasha of Tunis	600	1866

It is well known that Behieh Khanum, the wife of the late Premier Fuad Pasha, has carried on the slave trade on a much larger scale. Though I am not in a position to give particulars about it, I can, however, corroborate this statement by the following anecdote, which is of common notoriety among the harem society of Stambul. This lady, desirous of insuring an easy and liberal sale of her slaves, had recourse to a sorcerer, a khodja, said to possess supernatural powers. The sorcerer yielded to the demand of the illustrious client, and gave her a talismanic shirt, the power of which would invariably compel the customer to be smitten with the charms of the slave who was to wear it. The result seems to have fully justified the high reputation enjoyed by the sorcerer, as, according to Behieh's avowal, every girl who has put this shirt on captivated, at first sight, her customer.

The professional dealers, as well as the amateur ones, do not limit these operations in the slave article to Constantinople and the provinces; their transactions extend as far as Egypt and Tunis. To find a customer from one of those countries is considered by them a bit of good fortune. The imperial palace is also highly thought of in a business point of view, a constant supply being necessary to recruit the ranks of the harem. A girl once bought for the imperial harem, or in order to be attached to the court of the Sultanas, can never be sold again, as it is considered below the dignity of the throne that one who has served the princes of the blood should serve common mortals. As for male slaves, they are not very much in demand now-a-days; the

only case in which Circassian boys are required is when some imperial prince or the son of a pasha requires a playmate.

In the generality of cases the lot awaiting the Circassian slaves is not as happy as might perhaps be expected. And yet how could it be otherwise, when seclusion, jealousy, and profligacy render domestic happiness an impossibility? Besides this, the Circassian woman, whether wife or concubine, is always awkwardly situated in the midst of Turkish society. Exposed as she is to the hostile feelings of the native women, she cannot well rely on the capricious and fickle disposition of her husband or master. As for the concubines, they are the natural antagonists of the wives; the war waged between them frequently is attended with serious results; many of them, worn out and emaciated, die of consumption, and cases of violent death put an end to the life of others.

I know a case of this nature; the victim was a girl named *Yildiz*, who, after having been brutally beaten, was imprisoned in a subterranean room, condemned never to see the light again. The husband tried to rescue the unfortunate creature, but nothing could appease the fury of the jealous wife.

The happiest of all are the girls who have the good luck to be admitted to the imperial *Seraglios*. In those establishments the drawback is that of being obliged to submit to a more rigorous system of seclusion; but the abundance of everything and plenty of fun and amusement are, to a certain extent, a compensation for the want of that relative freedom which "women in town" can obtain. The careers which present themselves to the Circassian slaves on entering the palace are the following: the most lucky amongst them become either wives or concubines to the Sultan or to some member of the Imperial family; those less fortunate may grow up old maids inside the Seraglio, and attain there high positions and wealth; the career which befalls, however, the greatest number of these Circassian girls is that of leaving the Seraglio after a few years and getting married to some officer in the army or civil service. Though the girls coming out of the Seraglio are considered to be desperate flirts and fast in their manners, they are sure to find people eager enough to obtain protection who will not hesitate to marry them.

A curious thing in this respect are the marriages which take place between these Seraglio girls and the eunuchs. It is possible to understand that girls might carry on a flirtation with these harmless individuals, as long as they are not able to procure for themselves better representatives of the male type, but it is beyond the power of comprehension to imagine what can induce a lovely Circassian to shut herself up with a black eunuch. What is still more singular, is the fact that young, healthy and splendid girls should have actually accepted as husbands fellows of so little material importance, whilst suitors possessing all their physical attributes were eagerly seeking for their hands!

Notwithstanding all I have said with regard to the happiness of the Circassian slaves who live in the Seraglio, the sufferings which inevitably attend slavery must make many a victim. An old Circassian

peasant presented himself one day at the gate of the palace, where there was residing the second wife of Abdul-Medjid, the late Sultan. The old man announced himself as being the father of the Sultana, and requested to be allowed to see his daughter only once before he died. "Let me not gaze upon the face of him who did not hesitate to sell me as a slave," was the answer of the daughter. Does not this show that in the Seraglio life thorns are more plentiful than roses? It is useless to seek for happiness in the midst of jealousies, intrigues, and depravity.

What I have said about the lot of the Circassian girls in the Seraglio compels me to give here a summary sketch of its organisation. On touching a subject so attractive I must warn my hearers not to expect too much; I have never been admitted into the Sultan's harem, and can only give an account of what I have been able to learn about it through my intercourse with several of the ladies of the harem and with their eunuchs.

The Sultan's harem, which is improperly called by Europeans "Seraglio," is a vast building shut up in the midst of lofty walls, and to which the Sultans give the pompous name of "The Abode of Felicity" (*Dari-seda*). Where human beings congregate, an organisation of some sort has always been found to be necessary; so the many women gathered under the Sultan's roof could not live together without being placed under a system and hierarchical order. Starting from this point, it will be easy to form an idea of what is the Seraglio and its organisation.

At the top of the female hierarchy of the harem stands conspicuously and all powerful the *Valideh-Sultan*, the mother of the reigning Sultan. That the mother of the Sultan, and not one of his wives, should be what we would style the Queen, is but consistent with the state of Turkish society. A Turk, who can have many wives, can have but one mother. After the *Valideh* the most important personage is the *Haznehdar-ustah*, the mistress of the treasury. This woman is the intermediate agent between the Sultan and the ladies of the harem; her influence is very great, and at the death of the mother of the Sultan she becomes her successor in the leadership of the harem. The different *Kadins*, or wives of the Sultan, come next, every one of them according to the right of seniority. Then come the *Ikbals* (favourites), having at their head the first favourite or concubine.

Now, the *Valideh-Sultan*, the *Haznehdar-ustah*, let us say four *Kadins* (wives), plus half-a-dozen concubines, in the whole twelve persons are the heads of twelve *daïres* (courts) formed of their numerous attendants. These courts are formed of ten or fifteen women, some of them young, some of them more or less advanced in life, having separate and distinct duties to fulfil, as, for instance, that of treasurer, reader of the koran, secretary, giver of coffee, holder of the jug, and so on. An easy process of multiplication of these ten dignitaries by twelve will give us one hundred and twenty as the total representing the mass of this distinguished female body. But this is not all. These hundred and twenty ladies must be multiplied again by five, as five or six pupils, young slaves, are put under the direction and tutorship of each of the

ladies ; in this way, the first secretary has five under-secretaries or mates to help her in the fulfilment of her duties ; as many also as five assist the first giver of coffee when pouring the coffee in the cup of the Sultan's mother. The same system goes all the way through the different employments and degrees in the hierarchy, the total number of the women constituting these courts being close upon six hundred.

Besides these different functionaries and their mates, the Sultan's harem possesses a staff of white and negro cooks, a troupe of dancers and pantomimists, and a musical band composed of girls. All these courts and troupes form an integral part of the imperial household, and they are submitted to a sort of discipline something in the style of what is in vigour within the precincts of a convent.

Independently of these establishments, the heir to the crown, and every one of all the other sons and unmarried daughters of the late Sultan and of the present one has a little harem or court of his own, organised on the same principle, and sheltered under the same roof. As for the wives, concubines, sisters, and married daughters of the late Sultan, or of his father, they are to be deducted from this computation, for the reason that all of them keep up their establishments in separate palaces and buildings granted to them by the crown.

On studying the system on which is based the Sultan's harem, one cannot help seeing that this huge machine is a world by itself ; striving to live of its own life at the expense of the enormous sacrifices it imposes on society at large. Slavery is the only soil on which it can vegetate and prosper ; it is from slavery that it recruits itself ; without slavery it would inevitably perish. The Sultan is the pivot of the whole system of the Seraglio, as the sole object and purpose of its inmates is to live of his life and to be benefited by his radiancy. The same law is applicable to the other Princes and Sultanas who are also as many planets of their respective systems. The alliance or compact between royalty and slavery is so complete that one supports the other ; this explains why the Sultan leans so much to slavery, and why slavery should cling so fast to him.

The Sultan's harem has been called, and justly so, a world by itself. It has its own slave dealers, its own customers, its own tyrants, its own victims, it has everything, production excepted, and only on that account it has recourse to the outer market for a supply of slaves. The transactions are, however, limited within the walls of the Seraglio, where the inmates are actively busy in selling each other. If the ladies in town are bartering pretty slaves in the public market, so the Sultanas and the other grand ladies of the harem reserve to themselves the monopoly of that trade, with the object of captivating the Sultan or any of the Princes of the blood. A fascinating Circassian given in present, or sold to the Sultan, at the proper time, has often been found a first-rate expedient to checkmate a rival or bring a court intrigue to maturity.

The mechanism of the harem system explained, I will now show in what way it works. To understand this, the best method is, I think, that

of following the career of a Circassian girl, from the time she sets her foot in the harem to that in which she reaches the top of the ladder, by becoming either the mistress of the treasury or one of the Sultan's wives.

Let us suppose that the Sultan's mother, or one of his wives, requires a slave to recruit the number of her attendants. Several girls are immediately procured, and amongst them the Sultana makes her choice. The girl thus selected is intrusted to the care of one of those functionaries who form the court of the Sultana; let her be the giver of coffee or the first holder of the jug. Under the tutorship and guidance of this person the newly-bought slave goes through her apprenticeship. The tutoress takes towards the girl the place of a mother, and provides her with dresses, money, jewels, and, in short, with everything necessary for her to have. The affection which naturally arises between them often lasts throughout life; and a tutoress will seldom abandon her pupil in trouble and need, even if they exchange their condition for that of married life. It is only with the consent of the Sultana, their mistress, that either the pupil or the *calfa*, tutoress, or any other slave belonging to the court, can be given away; if the pupil gets married it is her tutoress who intercedes on her behalf and obtains from the Sultan's treasury and wardrobe the necessary funds and a suitable trousseau. At the death of any of these slaves her property goes back to the Sultana, who is her legal heir.

In case, however, the Circassian girl does not get married, but follows her career at court, her rise takes place in this way. For instance, if in the secretary department, she gets to be by successive steps third, second, and first secretary, then, if a fair opportunity presents itself, she may rise to the high position of mistress of the treasury; the greatest part, however, prefer stopping at the head of their respective offices as first giver of coffee, or first etc.; and when old they follow the court to which they are attached to its last retreat within the old Seraglio.

If, however, the girl whose career we are following is lucky enough to rise to the position of a concubine or of a wife, the ascendant march is effected in this way. The Sultan happens to be paying a visit at her mother's; there his eyes fall, let us suppose, on the girl in question; some significant looks of his, or some comments about her, being at once interpreted as unequivocal signs of imperial favour, the girl rises at once to the high position of *guzdeh*, a compound substantive which means "in the eye," as the Sultan is known to have her in his eye. *Ipsa facto* the girl abandons her former duties, is separated from her companions, and gets for herself an apartment in the harem. After that, she is sure to receive messages and summons to appear before her imperial lover, and climbs a degree higher by becoming an *Ikbâl*, which means one of the fortunate ones. Our Circassian girl then sees herself surrounded by a court, obtains a high salary, and finds that carriages and servants are placed at her disposal. Once a concubine, the leap to become a wife is not always sure; in many cases the girls decline the honour, preferring to be married in town according to

their own choice ; in others, the people at court prevent it by having recourse to unnatural expedients. To get one of these *Ikbals* is considered a high honour by many pashas, as a wife like that is an insurance against want of employment. If the *Ikbal* is to become a wife, the thing is easily done ; she changes her apartments, has a court arranged for her on the same footing as the courts of the other wives, and there the story ends. The Sultan, as chief Imam and Vicar of Mohammed, dispenses himself from marriage ceremonies of any kind, either religious or civil. The present Sultan, Abdul-Aziz, was said to have only one wife. This report, which was circulated about Europe at the epoch of his tour, is totally untrue. Abdul-Aziz has three wives ; the first he had before he mounted the throne, the second one became his wife in commemoration of his ascension to the throne, while the third was forced upon him by his sister Adileh Sultana, as a token of reconciliation between brother and sister. The names of the three wives are—Eda-dil, Hairani-dil, and Durney.

Many of the principal pashas in Constantinople are supposed also to have but one wife. This is literally true, but not in fact. The real thing is that their own wives are often unaware of the existence of numerous rivals carefully concealed below the surface. With the death of a pasha the mysteries are, however, revealed, as a number of odalisks with their babies sprout from the ground like so many mushrooms. This sad surprise has the effect, however, of soothing the grief of the wife, who soon consoles herself for the loss she has sustained by launching against the deceased a volley of imprecations.

The system on which slavery rests, and the evils which follow from it, having been described as fully as the limits of a lecture allow me to do, something must be added in conclusion with respect to the results to be expected from the suppression of slavery. It is evident that the suppression of slavery would have as a consequence the emancipation of women. The emancipation of women would bring about, however, the re-establishment in principle of the balance which in a normal state of things ought to exist between the halves constituting the social unity ; but the destruction of the undue ascendancy exerted by the male element would inevitably bring about in the east the subversion of the social and political edifice established on the basis of religion and tradition.

If official denials could do away with an evil, we ought to take for granted that slavery disappeared long ago from the Turkish dominions ; official denials cannot, unfortunately, do away with a state of things the existence of which is socially and politically a necessity. As slavery has been a powerful agent in the erection and extension of the Ottoman dominion, so it must also be an agent of destruction ; besides, slavery being intermixed to such an extent in the structure of Turkish society and state, at this advanced period of its existence a change of this nature cannot be effected without the walls crumbling down. If, however, regardless for such considerations, the Porte were determined to emancipate slaves, and to clear out the harems, letting Mohammed and his book say what they like, such a generous and noble way of acting would only hasten Turkey's last breath. The fences and

ditches which separate and protect the followers of Mohammed from contact with Christians once removed, no further resistance could be afforded, and the moral and material aggression of Christianity would soon submerge all traces of Mussulman existence.

The destructive effects which slavery has brought on the destinies of Turkey bring to the mind some useful reflections and some practical suggestions. The different streams of slavery which have constantly been swelling the masses of the Mussulman population of Turkey must be looked upon as a sort of immigration movement based on economical principles of a subverted nature. As long as the contingents of this immigration were employed by the Turks to warlike purposes, the immigrants turned out to be a paying concern; because by adding their number to the aggressive power of their newly adopted country, they had their share in augmenting the national booty and wealth. But that period once over, when these emigrants turned out to be only women and degrading agents of profligacy, then slaves and masters became one mass of corruption, unfit for war, and unfit likewise for the exercise of productive occupations. It is thus that the most fertile portion of the earth's surface has become a desert under their feet.

If the Turks of yore or those of to-day were wise, instead of buying slaves who must in the end ruin them, they would have solicited and begged in order to let into their country a stream of emigration from England or from any of the western countries of Europe. Instead of having slave dealers, they ought to have employed agents, and formed immigration societies, saying to the honest farmer and to the industrious mechanic: "Why are you undergoing privations and hardships in your own over-stocked country, where you can scarcely breathe for fear of trespassing on the rights of your neighbour? Come! come to our country; I have got here more fields than I require, more mountains and minerals than I can count; I will give you land, and you will give me labour, and the blessings of our covenant will fall on our posterity." If Turkey had acted thus, she would not be what she is—a doomed country.

Dr. CHARNOCK wished to ask the author of the paper—1. Whether the Turks had not ceased to import slaves from Circassia, and whether they were not now derived from Georgia only. 2. Whether the present Sultan possessed any harem. He thought it a pity that so well-organised an institution should be done away with. 3. Whether the Turkish law called *Kâbin*, by which a man could take unto himself a wife for a specified time, was still in vogue, and whether the author of the paper did not consider it an excellent institution.

Dr. CARTER BLAKE, referring to the marriage of eunuchs, said that there was clear evidence, both in Martial and other Roman poets, that three distinct modes of castration prevailed—one a simple laceration, one a partial removal, and the third, *podice secti usque ad umbilicum*, an entire obliteration of the parts affected.

The following gentlemen also took part in the discussion on the above papers:—Mr. A. L. Lewis, M. Robert Des Ruffières, Mr. Vincent, Dr. Seemann, Mr. Avery, Mr. Charlesworth, Dr. Richard King, Dr. Ioannides, Dr. Skues, Mr. Robins, and the Chairman.

The meeting then adjourned.

MARCH 15TH, 1870.

DR. R. S. CHARNOCK, V.P., IN THE CHAIR.

The minutes were read and confirmed.

The following elections were announced :—*Fellows*—Wm. Stephens Hayward, Esq., Long Wittingham, Abingdon, Berks ; P. Henderson, Esq., M.A., Vice-Consul at Benghazi, N. Africa, 1, Stafford Place, Buckingham Gate. *Local Secretary*—Dr. David Earl Burdett, Belleville, Ontario, Canada.

The list of presents was read, and thanks were voted to the donors :

FOR THE LIBRARY.

From the SOCIETY.—Proceedings of the American Antiquarian Society, No. 53.

From the SOCIETY.—Journal of the Royal Asiatic Society of Great Britain and Ireland, vol. iv, p. 12.

From the AUTHOR.—Ancient Battlefields in the southern portion of Northumberland, by Rev. Scott F. Surtees.

From the EDITOR.—The Food Journal, No. 2.

From the EDITOR.—Nature (to date).

From the SOCIETY.—Proceedings of the Society of Antiquaries of Scotland, vol. viii, part i.

From the SOCIETY.—Journal of the Asiatic Society of Bengal, Part II, No. 4.

From M. E. LARTET.—*Reliquiæ Aquitanicæ*, Part xi, by M. E. Lartet and H. Christy.

From Dr. E. S. RYAN TENISON.—The British Medical Journal, to date.

From the AUTHOR.—Comparative Longevity, by E. R. Lankester, Esq.

The following paper was read :—

On the Strange Peculiarities observed by a Religious Sect of Moscovites, called Scoptsis. By Dr. ISIDORE KOPERNICKY, Cor. Mem. A.S.L., and J. BARNARD DAVIS, M.D., F.R.S., V.P.A.S.L.

It was an opinion of the late Dr. Robert Knox that race had a determinate influence in religion. He said the Celtic race all over the world is, properly speaking, Catholic, when not Roman. The dominion of Catholicism among the Irish and French confirms this ; whilst in Wales and Cornwall, where religious enthusiasm is very prevalent, it is not episcopalianism which satisfies the desires of the population.

In a paper read by the Treasurer of this Society, the Rev. Dunbar Heath, in December 1866, something like the same idea appears to have been advocated ; but, unfortunately, the terms Aryan and Semite were introduced into it, or formed its substratum ; the former, especially, being a designation to which it is difficult to attach any definite and precise sense. It is used in connection with an hypothesis based upon philology, that, at a very remote epoch, a people who spoke a language cognate with Sanscrit invaded Europe from the east, and settled down in all parts of it, where their descendants still remain. The Rev. Dunbar Heath maintained in his memoir that Christianity, as a whole, is derived from this Aryan race, and not from a Semitic

race. It would be a very comforting doctrine if we could conclude that our religion had been derived from a race of people less superstitious, and endowed with higher powers of mind than the Hebrews. But there is probably no reason to doubt that Christianity had its foundations laid in Judea some 1900 years ago, among a Jewish people; that it did not come into Europe at any very remote antiquity, when the Aryans are imagined to have made their appearance; and as little reason is there to doubt that the wisdom of the *west* was conveyed to the east, many ages before the advent of Jesus Christ, as that Alexander had made his conquest in oriental countries and established the Bactrian kingdom. Mr. Heath's very learned arguments are of quite a different nature from those to which your attention will be invited this evening. They concern Christianity as a whole, and what it is now proposed to describe is a small sect of a particular, but well-defined race.

The name of this sect, which exists in Russia, is Scoptsis (mutilated), and in that country, and in some parts of Wallachia, where also its disciples are to be found, it is a secret sect. The reason of this will be apparent when it is known that the Scoptsis are distinguished for self-mutilation. These fanatical people base their peculiar notions upon the ninth chapter of the Gospel of St. Matthew, and interpret the 12th verse as an injunction to this unnatural practice.

But it is time that it should be made known to you, that the information here given concerning this strange sect, the photographs of its professors, and the anatomical preparation which exhibits the radical excision of the sexual organs of a male Scoptsi, are wholly derived from my friend Dr. I. Kopernicky, a corresponding member of this Society, an able and zealous anthropologist.

The Scoptsis form a sect of the Moscovites, or Great Russians in particular. This is the important anthropological fact revealed by the sect. The Moscovites, or Great Russians, are about 30,000,000 in number, and extend from the White Sea in the north to Koursk and Saratov in the south; from St. Petersburg in the west, to Viatka and Novgorod in the east; in truth, over a very large portion of European Russia. De Pauly calls them the *proper* Russians, and in this differs materially from Dr. Kopernicky, who designates the Ruthenians and White Russians the *true* Russians.

In order to introduce Dr. Kopernicky's description, I will give a translation of what M. de Pauly says of the Scoptsis. It should be premised that the "Raskol" is the name by which the whole body of dissidents from the Greek Church, or, to speak more correctly, the Russian Church, which is the sister of the Greek Church, but still an independent sister, and differing mainly by some external ceremonies, are called. The Raskol, therefore, has a similar meaning to our word Dissenters. The Raskol is of considerable antiquity, and these are divisions of it. The first and principal division is named Bespopovchchina. "It is in the Bespopovchchina that is met with the remarkable sect of Scoptsy, who voluntarily mutilate themselves by cutting off their sexual organs. The Scoptsy, in justification of their system of mutilation, build upon certain passages of the New Testa-

ment, which, wrongly understood and falsely interpreted, may, in fact, serve as a pretext for this deplorable error. They believe that paradise will be manifested on earth when the whole human race shall be found in this state of mutilation; that their apostle, under the name of Selivanov, continually wanders beyond Lake Baikal, in order one day to assemble together all the partisans of the sect, to reign upon earth, and to spread over it peace and eternal happiness. Pursued by Government as attached to an immoral sect, they seek to obtain by the influence of considerable riches of which they dispose—for in the great cities many jewellers, goldsmiths, and dealers in gold make part of this sect—a certain toleration which never extends to the new converts, who are rigorously persecuted. Although less numerous than the other sects, none is more greedy of proselytes than this, and the painful operation which formed the principal object of the doctrine is accomplished among them with remarkable expertness. At times the mutilation of the father-head of a family takes place only after the birth of a son, and this delay evidently has for its object the preservation of the property in the same family. But it often also happens that strangers fulfil the conjugal duties without the manifestation of any irritation on the part of the husband towards the wife. The belief and the divine worship of the Skoptsy breathe an ardent and exalted sentiment of hope and of resignation.”* De Pauly adds, that at the present day the Government has ceased to exercise against sectaries those repressions which strengthened their obstinacy and augmented their numbers. This is quite inconsistent with what Dr. Kopernicky relates.

The name *Moscovites* is the true and proper appellation of the Great Russians. Their neighbours, the Poles, Lithuanians, and the true Russians, or Ruthenians, *i.e.* the White Russians and Little Russians, or Ukranians, never call them otherwise. The Great Russians as a nation and as a state (*Tsarat*) were not known till the eighteenth century, save under the name of *Moscovites*. It was Peter the Great and Catharine II, who, finding that this name was objectionable and of bad odour among the European family, usurped the designation of Russians and imposed it on the nation by the force of *Ukases*. This history is truly curious, not only in a political point of view, but also in an ethnological one.

The Skoptsi is a tolerably numerous religious sect. Its peculiarities are based on the literal interpretation of the words of the Evangelist: “*Expedi enim tibi ut pereat unum membrorum tuorum, quam totum corpus tuum eat in gehennam.*” It is better that one of thy members should perish than that thy whole body should go to hell. These miserable eunuchs, who are distinguished for much ardour in their proselytism, are severely pursued. Those among them who, especially in the reign of Nicholas I, had not succeeded in purchasing at great cost the right to practise in secret within their own country their abominable worship, were forced to emigrate into neighbouring provinces. But it was only in Wallachia and Moldavia that they were allowed to settle. They are very numerous at Jassy, at Galatz, and at Bucharest. In these cities they are nearly all coach-drivers and

* De Pauly, *Peuple de la Russie*, p. 44.

proprietors of voitures de place, or hackney carriages, and it is only at the price of fifty to one hundred ducats, with a carriage and a pair of horses, that they ordinarily gain their proselytes. They are in general very greedy, avaricious, but peaceful and sober. They dwell in communities, and inhabit distinct quarters of the towns in which they live, and practise their rites with such secrecy that it is impossible for a stranger to visit their assemblies. So secret are they that Dr. Kopernicky has found it impossible to learn where or how they inter their dead. They never even send their sick to the hospital, and it was only last year that he has had the sole occasion to dissect one of the Scoptsis, one who was found dead in the public highway, and consequently his body had to undergo a medico-legal examination. It is curious from what Dr. Kopernicky has confirmed upon this dead body, that in mutilating themselves they do not stop at the extirpation of the testicles *lege artis*, nor in their extirpation with the scrotum, but they also cut off the entire penis close to the pubes. It should be noted that the larynx of the old castrated men or eunuchs has the feminine form, as is well-known to be the case in emasculated persons in Turkey and Egypt.

(The anatomical preparation was exhibited.)

The photographs now presented to the Society are all of rich individual Scoptsis at Bucharest. They have their privileged photographer, who by chance was discovered by Dr. Kopernicky. Save the expression of their physiognomy—evidently derived from their mutilation—that peculiar mildness and want of force in their countenances, which is heightened by the particular manner in which most of them wear their hair—they are all true types of Moscovites; very different, Dr. Kopernicky adds, from the ideal ones which the Panslavic Congress of Moscow distributed in 1867. In some of them is plainly to be descried the large bony coarse skull of the Moscovite, with a long face, which has been described in the *Thesaurus Craniorum*, p. 120.

It is especially worthy of notice that the religious sects among the Moscovites seem to merit a particular attention anthropologically. First, the true Russians, *i.e.* the White Russians and the Little Russians are all orthodox of the United Greek Church, and there have never been any religious sects among them. Among the Moscovites, on the contrary, it is only the smallest party which is orthodox, and the major part is divided into different sects more or less numerous, of which there are many dozens.

From Dr. Kopernicky I have obtained much further information respecting the history of the Scoptsis. He says, this sect must have taken deep root in the manners and religious ideas of the Moscovites, since the energetic persecution of twenty years to which it was subjected in the time of Nicholas I, has not succeeded in destroying it. Even quite recently it has been said that an important focus of the sect has been discovered at Moscow. An event, which made much noise at the time in Russia, was the discovery at the commencement of last year of quite a centre of Scoptsis at Morshansk, a city of the district of the Government of Tambov.

A rich merchant of that city, named Maxime Plotitsine, being de-

nounced as chief of these sectaries, was arrested, and the domiciliary visit to his house brought to light five unsexed individuals, men and women. They found images of a certain Selivanov and of the Emperor Peter III, both of whom are adored by the Scoptsis as their *Christs*, and of a woman, Akoulina Ivanovna, still living, and honoured by them as *Notre Dame*, or the Virgin. Besides which there were discovered there enormous sums in gold and silver, which certainly constituted the central treasury of the sect. It was affirmed that the police seized 30,000,000 of roubles (£5,000,000 sterling !), which gradually, before it came into the hands of the Government, dwindled down, by means well-known in Russia, to half-a-million of roubles. These millions, accumulated and hidden in one city of the district, and confided without reserve to the discretion of a single private person, prove that the Scoptsis constitute a communist society very powerful and strong in its organisation. As to their proselytism, everything leads to the belief that they have considerable success. Thus in this affair of Morshansk there were fifty Scoptsis, men and women, arrested in the city, and an equal number in the district. Among the arrests there were *members of the Russian clergy*.

As, on the occasion of this affair, the public and the press were chiefly occupied with the treasures and their disappearance, and as the inquest into the affair was made in secret, there were few details of interest published about the Scoptsis of Morshansk, on the extent and the means of their propagandism, their manners and creed, or on the mysteries of their worship. Happily, however, Dr. Kopernicky says, in the *Moscow Gazette* (*Moskovskia Viedomosti*, which is a sort of Russian *Times*), there was a very valuable article, which was published on this occasion (Nos. 51, 52, and 54), under the title of "The Sects of the Scoptsis, in the Government of the Tauride in 1865," *i.e.* four years ago.

As this notice was entirely based upon the official documents of the inquest, it possesses all the merit of unquestionable authenticity. It unveils a series of details so curious and altogether so unknown that Dr. Kopernicky has had the kindness to furnish me with an extract from it.

It was taken on the Sea of Azov, in the Moscovite Colonies, on the two shores of the river Molotchna, in the districts of Berdiansk and Mililopol, which the proselytism of the Scoptsis had principally invaded.

In April, 1865, many rural communes of this last district addressed their complaints to the authorities against the growing phrensy of the Shaloputs, a sort of neophytes, or Scoptsis of the first degree, who are not yet castrated, who in open day had introduced mutilation into the bosom of their families. The most flagrant case was the complaint of a poor old man, whose young and beautiful daughter they had mutilated, without his having any suspicion of it.

It was proved at the inquest that the Shaloputs observed all the religious practices of the orthodox church, but it was only to mislead the surveillance of their neighbours, and to be able to observe their own nocturnal mysteries with more security. They reject all the

bonds of family relations and call their own fathers and mothers "fornicators." They require and receive from their proselytes an oath to keep absolute secrecy upon all that concerns their sect. During their nocturnal services, they cast at the feet of the new converts to be trodden on, the money of the country (the symbol of civil power), the written names of the father and mother of the convert, and the image of a saint (symbol of the official church). It is precisely in these nocturnal assemblies that they practise the sacrifice of castration in the midst of songs and dancing.

The Shaloputs and the Scoptsis are in the habit of establishing their dwellings in the neighbourhood of each other. It was thus, for example, that at Michailovka they occupied "the extremity of the Tim," the name of a district of the government of Kursk, in which village the first Scoptsis arrived in the eighteenth century. There were sixty-six Shaloputs in this village, among whom twelve were mutilated (three men and nine women), many of them recently.

In another village, in two Shaloput families, which contained nine persons, five were found to be castrated, among whom was a boy of 14. In another place likewise, among twenty-three Shaloputs there were eleven adults mutilated (three males and eight females), and three young boys of 15, 14, and 9 years of age. Upon this last, as well as upon two other children of the same age, the operation had been accomplished by "a special proceeding only possible in children" (?). Lastly, in another village there was found a woman of 35 years of age mutilated, who had been blind from birth. They also found Scoptsis who had undergone mutilation, of 60 and 70 years of age. In the whole, among 147 seized and examined in this district, 47 completed Scoptsis were imprisoned; among those there were many more females, 30, than males, 17. Many among the latter had received the *sigillum magnum*, that is to say, as is supposed, they had had their virile members amputated in the manner of the Bucharest Scoptsis, who would have been regarded undoubtedly as one of their saints. Among those arrested were two families of Scoptsis, of whom all were mutilated, both parents and children.

To escape the transportation to Siberia which awaited them, the Scoptsis interrogated ordinarily sought to justify themselves in different ways. Thus the married women either denied altogether their mutilation, or sought to make it believed that the cicatrices observed were the result of ulcerations, or of previous accouchements. The girls pretended that they were congenital vices of conformation, etc. As to the men, some avowed freely and naïvely that in accordance with the sixth chapter of Matthew they had mutilated themselves; others affirmed that it was an *unknown* person who had mutilated them after having stupified them by means of a narcotic drink.

As, according to the penal code, Scoptsis who were castrated by violence or by artifice were acquitted, and even received *special* certificates by which they were enabled to dwell in safety, they did not fail to put forth this favourable circumstance, and often sought to give their odious practices all the appearance of an act of violence. As soon as they learned that one of their castrators in any part was

on the point of being seized by the police, they hastened to put themselves in his hands, they made it known to all the communes of the Scoptsis, and set to work with double energy to accomplish the greatest number of castrations possible; all at the expense of this operator. As soon as he is taken, complaints against him arrive from all parts. He does not deny them. And in this way the pretended victims of his barbarous violence get acquitted, and furnished with certificates which defend them from all persecution, and render them still more at liberty to continue their hateful proselytism.

To the exhortations which are made to them during the interrogatory of the inquest, the Shaloputs ordinarily reply in proverbs. "The edifice of the church does not consist of beams, but of ribs," they say, professing their dogma of the *invisible church*. "Do not incense the image, for you will smoke it." "The thieves have cut it, and the cattle are gone;" thus expressing themselves of the orthodox church. "He who has large sleeves has a wicked soul," etc.

The chief of the Militapolitani Scoptsis, a certain *Babanine*, escaped the pursuit. The Shaloputs represent her as an ardent fanatic, eloquent, and possessing the gift of prophesying. It was discovered that she entertained intimate relations with the Scoptsis of Bucharest and of Galatz, in Moldo-Wallachia. These having a great authority over the sectaries, encouraged and sent their benediction for the good work to the Scoptsis of Militapol. The inquest in the district of Berdiansk also showed that the sectaries of this country maintained a mysterious connection with a certain *Akouline Ivanouna*, who resided secretly at Bielgarad, in the Government of Kursk, and who is adored by the Scoptsis as the "Mother of God," the "Queen of Heaven." The Scoptsis and the Shaloputs make pilgrimages to this goddess, and address prayers to her in their religious services. They affirm that this *Akouline* dwells behind a *wall of gold*, and that she has never been able to be discovered. And, in fact, on the occasion of the different affairs of the Scoptsis, she was many times sought for by the police, but always in vain. The wall of gold dazzled in such a manner those who sought her.

It was the inquest at Berdiansk principally which brought to light many of the details concerning the dogmas and religious practices of the Scoptsis, of which these are the most prominent.

Babanine taught that to render oneself worthy of entering into the Kingdom of God, and of receiving the spirit of God, it is indispensable for a man to be castrated; for castration is the supreme good work, it is that "seal of God" which marks the elect of the Lord, and is spoken of in the sixth chapter of the Apocalypse. To live with a wife is to practise adultery, and draw down the punishment of God, similar to that which overtook David for having touched the wife of Uriah. *Babanine* ordered the adoration of Peter III as a second Christ, since Peter also was a eunuch and had his twelve disciples whom he sent out to preach the doctrine of the Scoptsis. The twelve apostles of Christ and the twelve disciples of Peter III, these are the twenty-four elders of the Apocalypse, who are seated upon the twenty-four thrones, and

the souls of the massacred at their feet are all the *faithful* belonging to the sect of the Scoptsis.

They reckon among their saints, besides Peter III, the Empress Elizabeth Petrovina, Paul I, and Alexander I, who all protected their sect. Lastly, as has been already said, the same Akoulina Ivanavna, of Bielgarad, is adored by them as the "Queen of Heaven." It may be mentioned that Elizabeth was the daughter of Peter the Great, and reigned upwards of twenty years, was much regretted by her subjects, to whom she had endeared herself by the mildness of her administration. She was succeeded by Peter III, who only reigned six months, when he was dethroned and put into prison, where he died in a week, it is supposed by violence, in which his ambitious consort Catherine was concerned.

The Scoptsis reject the authority of the orthodox church, and call it Babylonian. They reject the eucharist, and hold baptism to be of no value when received from an orthodox priest. Babanine requires that they should be *rebaptised in spirit*. The ceremony of this baptism, practised upon every new convert, is accomplished in the following manner. In their nocturnal assemblies, in which this act ought to take place, they kindle a great number of candles. At the entrance of the neophyte the assembled Shaloputs salute him by saying: "You, who baptise yourself in the name of Christ, put on Christ!" The disciple repeats these words, and adds: "In the name of the Father, and of the Son, and of the Holy Spirit, Amen! Lord! have pity on my soul, receive it among the number of the just, and write my soul in the book of life, in the book of the seventh heaven!" Afterwards Babanine and the baptised pronounce the "canon fidei"; lastly, the latter solemnly repeats the following oath: "Now, O Lord! having received thy law, I will never speak of it to my parents, nor to the world, nor to the *possessors of the darkness of this age* (i.e., to the clergy and the authorities who persecute their sect), and if I should ever speak of it O Lord! then never pardon me, O Lord! nor have pity on me, and may thy cross strike me down, O crucified. Amen."

The oath having been pronounced, they sing "Ave Maria." Afterwards, the newly baptised repeats after Babanine the prayer "Have pity on me!" Addressed successively to the "Lords of God," Peter III, Tiadorovites, Paul I, and Alexander I, and to the "Lady Mothers" Elizabeth Petrovina and Akoulina Ivanovna, "Queen of the Heavens." The ceremony is finished by the absurd question of Babanine, made of the new convert: "Does baptism please you?"

For their nocturnal meeting the Scoptsis have no days fixed beforehand. Each time a meeting ought to take place is arranged five or six days before; when they assemble at ten o'clock at night, and remain till the break of day. Those who become fatigued ascend into the garret of the house to lie down, and are replaced by others who arrive later in the night. In order not to attract the indiscreet attention of the neighbours, in quitting the assembly, they take care to go out in small groups, and many remain till the following night. Their chief especially arrives only in the night, and departs before the day. In these assemblies the sitting is opened by chanting hymns composed

by one of their inspired psalmists, as Babanine. First, it is the men who chant, striking each measure upon their knees. "Omnes gentes plaudite manibus," Ps. The women dance round, stepping in measures—some among them turn themselves round. This dance continues till the complete exhaustion of the dancers, which is often followed by convulsions and vomiting. Then, a change takes place; the women begin to chant, to beat the measure, to jump and turn. This is called "working for God," and constitutes, after mutilation, the work most agreeable to the Lord. Babanine assured her disciples that it was in the same way that our Saviour Himself prayed in the Garden of Gethsemane, and that it was the same dance which the angels of heaven dance round the throne of God, after having expelled Satan. Lastly, that the Lord Himself taught us to *turn* upon Mount Tabor, where He showed His glory, and ascended to heaven *turning*.

The commission of the inquest succeeded in obtaining many of the hymns of the Scoptsis chanted in their assemblies. They are for the most part the most foolish and barbarous absurdities put into bad rhymes and intermixed with flattering allusions to their sect. It is nearly impossible to translate these absurdities into a human language. Dr. Kopernicky has, however, attempted to translate one as a specimen.

"Bless, O secret synod! thy faithful orphans to render glory to the Lord by means of the Divine round"—the dance of the Scoptsis—"it invokes the spirit that he may smile upon us—our Lord and our Life! descend from the seventh heaven. He marches through all the villages; light dwells in Him. The Word is gone forth, the Word delivered by the prophets that we should not do evil." "And again, my dears, I go to tell you a serious saying: *that the treasure may be prepared*" (?) The secret and invisible manna descends to us from heaven, and the living water flows to us also." "Do not delay the moments, for I go to collect the seed."

"All the archbishops and senators will admire his great suffering.

"Our Father the Emperor (Peter III) suffers his last suffering, and inclines himself in prayer before Sabaoth.

"O my heavenly Father! I do Thy will, I do Thy will, and I teach my little children and order them to keep the law.

"Do thou carry the heavenly word, and do thou implore Sabaoth for us all, O our dear Bird!

"Our light, O Lord! will reign shortly both in heaven and on earth. The glory of God, honour and power for ever. Amen!"

After the chants and the exhausting dances, the prophecies follow. The prophet Babanine, in white stockings, the Bible open in her hands, places herself upon a cloth stretched out in the middle of the chamber. The sectaries all on their knees, surround her. Babanine begins:—

"Let us pray rightly, that the second Christ may be brought to life again? He is present among us. Open your ears, for I am going to do miracles! Behold the book of generation (?), the theologian (*sic*) goes to read it to you." And afterwards she begins to prophesy, in absurd and badly rhyming verses, at first, for all in general, and then

for certain Shaloputs in particular. Thus, to one of them she predicts: "Thou, like to the prophet Abbakhum, thou shalt be host in all the cities; and thyself white as a pigeon, thou shalt feed the white pigeons."

To another, who is preparing himself to be castrated, Babanina exclaims:—"O, thou soul well-beloved! thou shalt receive from heaven signs which will astonish the whole family of Israel. . . . And the Father will not fail to give thee the heptagon (?) crown. It is alone necessary that thou shalt decide to pour out thy blood for Christ!" All the auditory weep aloud, moved by these sublime words.

It is with particular vehemence that this Babanine preaches against the sin of the violation of the secret, as of Judas selling Christ. She also interprets with ardour the Apocalypse, and principally the sixth chapter. The second verse of this chapter is referred to Peter III, who, being castrated, vanquished the enemy; the fourth verse is supposed to relate to Alexander I; the fifth and sixth verses to the Scoptsis, and the extension of their sect. *Bilibris tritici* signifies the sacrifice of castration; *tres bilibres hordei denario* signifies that one not castrated must work three times more than the eunuch to attain salvation. *Oleum* signifies grace, *vinum* joy, destined for the Scoptsis. The eighth verse has relation to Nicholas I, who delivered the people of God—the Scoptsis—as a prey to the beasts of the earth, to the archbishops, and impure authorities. In the ninth chapter, the "seal of God" signifies mutilation, and the "locusts" war and crimes.

This is a tolerably faithful, although certainly not complete picture of this savage and extraordinary sect. The fully proved existence of such a sect, especially as a Christian sect, seems to be a phenomenon truly worthy to attract the attention of anthropologists.

Dr. Kopernicky says that he considers there are many reasons for believing that this aberration in Christianity cannot be explained otherwise than by the psychological peculiarity of the race of Moscovites, in which it prevails. He adds, that he well recollects the judicious and profound opinions pronounced by the Rev. Dunbar Heath, already alluded to, upon the difference which exists between the Semite and Aryan races in their appreciation of the doctrine of Christianity. In reflecting on the Scoptsis, who exist and prosper among the Moscovites, it may be equally asked—what is this race which, having received Christianity, is capable of producing and suffering such fruits.

Dr. Kopernicky holds it for an anthropological fact least questionable that the ideas and religious creeds, sound or absurd, moral or immoral, etc., which are produced, or develop themselves among a certain race, depend greatly upon the character of the psychological sentiments natural to that race. This is the reason why the Gospel was so readily accepted, and has taken such root among the Aryan people, and why, on the contrary, the Koran has had most success and most persistence among the Semites. It is also the reason why, as has been demonstrated by the learned discussions in the bosom of this Anthropological Society of London, the propagation of Mohammedanism has more chances of success among African Negroes than Christian missions have hitherto had.

In examining the nature and the origin of Christian sects from this point of view—as so many varieties in religious belief produced in Christianity—it is seen that we shall confirm the same fact of the existence of an intimate and natural bond between the psychological character of a race and its religious ideas and practices. Thus, among the Christian sects so numerous in the United States of America, we only see for the most part extravagances which are purely doctrinal, or different aberrations which manifest themselves by strange rites, and which are at most ridiculous or absurd. But a sect so *dénaturée et barbare* as that of the Scoptsis, the Chlystis, the Molokans, and others which prosper among the Moscovites, never could subsist in America, even for half a year. They would be driven away in a manner the Mormons, who are much less monstrous than the Scoptsis, have been driven into the desert.

Then what is this Moscovite race, which, becoming Christian, gives birth to religious monstrosities of this kind? It is not the Slave race without doubt, since that which precisely distinguishes the Slavie nations in their religious creeds is their attachment to a religion once adopted and become traditional. Thus, to speak only of the *Orthodox* Slaves, the nearest to the Moscovites, *i.e.* the Ruthenians and the White Russians, the fact is, that since the introduction of Christianity there have never existed sects among them, in the way that they are seen among the Muscovites.

But, it may be replied, that race has nothing to do with the origin of such sects as the Scoptsis, since this is a *morbid* phenomenon, so to speak, and which, under one form or another, may arise anywhere, especially where, as in Russia, the people are not enlightened and the clergy ignorant.

A reply might be made by directing attention to the same Ruthenians, the Serfs, the Bulgarians, and the Moldo-Wallachians, who are not at all more advanced in civilisation than the Moscovites, but among whom a similar phenomenon never has been and never will be produced. It is certainly because that, in the nature of these races, there are no necessary elements for the production and nourishment of such monstrosities.

There is one thing among the Scoptsis to which Dr. Kopernicky is disposed to attribute a Tatar origin, *i.e.*, their dancing and rotation until fainting and ecstasy are produced, which reminds us of the whirling Dervishes of Central Asia. This is so much the more probable, as there are other sects, as the Chlystys and the Dancers, in which dancing and prophesying constitute integral parts of their religious mysteries.

Dr. Kopernicky's recital reveals a striking difference in the state of society and laws under which the Scoptsis are placed from those which prevail in this country. Here all things are tolerated in religion, even enforced celibacy, both of males and females, however unnatural. Although not accompanied with mutilations such as those practised by the Scoptsis, it is equally contrary to the law of nature, and also productive of a frightful amount of evil. Similar mutilations to those practised by the Scoptsis, as far as castration goes, are sometimes met

with in this country, but they are usually made known only among the inmates of our lunatic asylums, who occasionally mutilate themselves.

The term "Raskol", it has already been explained, is the name under which all dissenters in Russia are included. This designation appears to be applied to the Great Russians or Moscovites solely. It is worthy of being communicated to the Society that there is another sect of the Bespopovchchina, or first division of the Raskol, who are in Siberia, which sect has proceeded to greater lengths even than those exhibited by the Scoptsis. This is the Tschovstevnickicks (meaning those who are sensible, as if in derision of their practices) who, not only live in celibacy, but also voluntarily devote themselves to the flames, which has been done in recent times amid religious chants, and without drawing from them any indications of pain by cries or trepidation. It was thus that in the neighbourhood of the town of Tumen, in Western Siberia, one thousand seven hundred persons, with an ecclesiastic named Dometian, took the resolution to burn themselves together.

In confirmation of the theory of Dr. Kopernicky, a reference might be made to the races of India, in whom religious practices most contrary to reason and nature prevail extensively. Devotees observe rites which are quite frightful and abominable. One which is practised may be mentioned. There are some fanatics who avoid excrementitious evacuations. They are said to live upon milk, and, after having taken it some little time, they swallow a small ball attached to a string, which causes them to vomit up the remora. They thus avoid the evacuation of feces in the ordinary and natural manner.

It may be added that the priests of the Phrygian Cybele castrated themselves, which was done with a potsherd, that by lacerating the vessels would prevent hæmorrhage. The same rule was binding upon the priests of the "Dea Syria," who in many points resembles the Greek Aphrodite, and was worshipped at Edessa. But it is related that they emasculated themselves by the external application of a plant which is translated "hemlock". A learned friend, who has reminded me of these instances, says that there was not any early Christian sect observing such a rule, but that individuals thought it imperative to obey the injunction in St. Matthew, as in the case of the celebrated Origen.

The mode of arranging the hair seen in the photographs of the Scoptsis, by parting it down the middle, is not exclusively peculiar to that sect. All the Moscovites, without exception, wear it in the same manner. This fashion does not prevail among the Little Russians, nor among the Lithuanians or Poles.

It is not known at what period the sect of the Scoptsis took its rise, but it probably arose during the latter half of the last century, about the time of the great revolt of Pougatcheff (1770-73), which would connect it with the Emperor Peter III, their saint.

The kind of operation practised by the Scoptsis upon women is wholly unknown.

It is remarkable, but deserving of anthropological notice, that the

Moscovites or Great Russians, amongst whom exclusively the Scoptsis prevail, are also distinguished among the people of Russia for their fits of drunkenness, which are not met with among the Little Russians, nor the White Russians. These are regarded as a disease, which has the name of Zapoï.

Discussion having been invited,

The Rev. DUNBAR I. HEATH said that the paper was very opportune, as Professor Max Müller had lately drawn attention to the natural law by which all known religions had grown one out of the other. The subjects to which he would direct attention were two : first, to what racial religion this extraordinary sect belonged ; and second, to the great question which their practices so vividly brought before us as to the contest between individual rights against society and those of society against the individual. It had been said that, being Christians, their religion must be substantially Semitic. Not so. Throughout the whole of the Hebrew sacred writings it was recognised that sexuality was not evil. The Jews held the eunuch to be unclean, and for that reason rejected the prophet Daniel, from whom we derive the most fundamental ideas of our present Christianity. Neither in the history of their greatest saints, nor in the precepts of their greatest writers, was even ordinary chastity recommended, still less the essential rites of these Scoptsi. As to putting down the Scoptsi by force, on the plea that their practices are injurious to society, there were at that moment women in England not only suffering from one of the most frightful of diseases, but one which was also most frightfully contagious, and not only most frightfully contagious, but most frightfully hereditary. The harm done to society by these unfortunates is a thousandfold greater than that done by the Scoptsi, who simply take the most straightforward means of escaping from what they conceive to be wicked. Yet very many are seeking in the name of individual right to perpetuate misery and deformity among our progeny. The solution of this great contest, viz., the contest between opposing rights is to be found, as Buckle says, only in the increase of knowledge, society is happily now more and more emancipated from the old ideas imposed on it by a tyrannical religiosity. It is becoming more and more benevolent, more and more charitable, affectionate, and good.

Dr. T. SPENCER COBBOLD described the extent of the mutilation as shown by the preparation exhibited.

Dr. CHARNOCK said it seemed doubtful from the paper upon which verse in Matthew the Scoptsi based their origin. In two places it was said that they acted in accordance with Matth. xix : it afterwards appeared that the peculiarities of the sect arose through the literal interpretation of the Evangelist "*Expedi enim tibi ut pereat unum membrum tuorum*" (Matth. v, verse 29) ; but the latter had reference to plucking out the right eye, cutting off the right hand, and however silly these people might be, they could have hardly confounded the eye or the hand with the *membrum virile*. Without doubt the sect had originated through the misinterpretation of Matt. xix, v. 12 :—"For there were some eunuchs which were so born from their mother's womb, and there are some eunuchs which were made eunuchs of men, and there

be eunuchs which have made themselves eunuchs for the kingdom of heaven's sake. He that is able to receive it let him receive it." According to the best commentators, the assertion that some eunuchs made themselves such referred to the living a life of celibacy and not to mutilating the body,* and the words "Ο ἐννήμενος χυπεῖν, χυπεῖτω, merely meant that those who were able to lead such a life had better do so. It was not, however, difficult to understand that the Scoptsi should have mistaken the passage in Matthew. Origen, the celebrated Christian writer, interpreting this to the letter, castrated himself; but it was a fact that he afterwards repented of what he had done, and in a commentary on Matth. xix, repudiated this literal understanding of the words. Again, a sect called Valentinians (who took their name from the celebrated Gnostic Valentinus), interpreting this injunction to the letter, castrated themselves. Moreover the practice is recommended by Philon the Jew and other ancient philosophers for the sake of chastity. Dr. Barnard Davis says that among the Ruthenians, Serbs, Bulgarians, and Moldo-Wallachians, who are not more advanced in civilisation than the Moscovites, similar phenomena never have been, and never will be, produced. It was, perhaps, questionable whether civilisation had anything to do with the matter, and it was impossible to say what might not take place. Dr. Charnock was glad to hear the opinion of the authors of the paper as to the terms "Aryan" and "Semitic." The former term had no meaning, either ethnologically, geographically, or philologically, and was only equalled in absurdity by that of Turanian. The name of the Scoptsi was no doubt derived from the Russian word *skopet*, to castrate. The word *Popovshcheena* meant "those who have priests;" *Bespoposcheena*, "those without priests." He agreed with Dr. Carter Blake that the facial character, as shown by the photographs produced, differed little from that of the Russians generally.

Mr. W. R. S. RALSTON (of the British Museum) said that the word Scoptsi was derived from the verb in its infinitive, *skopit*, to castrate. Hence *skopets*, an eunuch; and nominative plural *skoptsi*, eunuchs. Their numbers were supposed to have been at the time of the report sent in to the minister of the interior (in Russia) about two thousand. Almost all of them live in the governments of Moscow or Tambof. But about one hundred and seventy are at St. Petersburg, chiefly money-changers. The appearance of these people is so strange and characteristic, that no one who has observed them can fail afterwards to recognise them. At a little distance, their faces seem almost youthful; seen nearer, they are found to be equally wanting in the usual marks of early life or of later age. The cheeks are generally smooth, though some of them have a thin whisker or beard, and they have a kind of creased or rumpled look. The mouth is usually weak; but the most striking features are the hue of the skin and the expression of the eye. Their complexion is pallid, tallowy, and unwholesome; and, although it may have a touch of colour, the skin seems to be rather painted than suffused. Below the eye, the skin is drawn

* The Vulgate has, however, "Et sunt eunuchi, seipsos castraverunt propter regnum cælorum."

and dark ; in extreme cases, the eye itself is glassy and lustreless, while, from its corners, thousands of fine wrinkles spread over the face, puckering it so strangely as though a cobweb were clinging to it. Many Scoptsi do not differ much in appearance from other Russians ; but they are always recognisable at first sight, owing to their having some of that worn and haggard aspect which, in other members of the community, becomes utter ghastliness. In a curious collection of documents relating to the Roskolniks, or schismatics, of Russia, printed privately, by order of the Russian Government, but afterwards reprinted in London, and published by Mr. Trübner, with a French title (*Recueil de Documents Officiels sur les Dissidents Russes*, 6 vols. London : 1863), much information is given concerning the Scoptsi. This work is accompanied by an album of photographs, most of which are taken from drawings made for the purpose of illustrating the volume devoted to this and several kindred sects. Among them are five representations of secret rites of the Scoptsi. The first of these pictures represents their ceremony of initiation ; in the last, a novice is being received at a formal meeting of the members of the sect. The others show their wild dances, technically called *Radzeniga* (*Radzenie* properly means zeal). The circular dance of the Scoptsi is called the "boat *Radzenie*"; for their community is styled by them "the boat" (*Kopablik*), and its members "boatmen". Their enemies assert that these dances degenerate into horrible orgies ; but such charges must always be regarded with suspicion. In many respects they may be compared with the Essenes, especially so far as they form a permanent community, in spite of their singular ideas about the marriage state. The Essenes were recruited from without, and so are the Scoptsi. Every Scoptet is anxious to enlist new members ; for he becomes an "apostle" as soon as he has made twelve converts. They are well-behaved people in most respects, honest, sober, thrifty. But the government has always more or less proscribed them, and attempts have been made from time to time to crush them. The chances are that as education progresses in Russia, and a purer religious feeling spreads among its inhabitants, such manifestations of diverted piety as these pitiable fanatics exhibit will become rarer and rarer, and finally disappear altogether.

After further remarks from Mr. Walter Dendy, Mr. Moncure Conway, Mr. Charlesworth, and Mr. Lewis, the meeting adjourned till 5th April.

APRIL 5TH, 1870.

CAPTAIN BEDFORD PIM, R.N., V.P., IN THE CHAIR.

The minutes were read and confirmed.

The thanks of the meeting were voted for the list of presents, viz. :

FOR THE LIBRARY.

From the SOCIETY.—Proceedings of the Geological and Polytechnic Society of Yorkshire, 1869.

From the SOCIETY.—Proceedings of the Royal Geographical Society, No. 1, vol. xiv.

From the AUTHOR.—Description of the Cavern of Bruniquel and its organic remains, by Professor R. Owen, F.R.S.

From the ACADEMY.—Bulletin de l'Academie Imperiale des Sciences de St. Petersburg, tom. xiv, Nos. 1, 2, 3.

From GEORGE TATE, ESQ.—Proceedings of the Berwickshire Naturalists' Club.

From the SOCIETY.—Proceedings of the Royal Society, No. 117.

From the AUTHOR.—Descrizione di un Celosomo Dirino con exencefalia idiocefalica, by Prof. A. Garbiglietti.

From the EDITOR.—Scientific Opinion (to date).

From the EDITOR.—Nature (to date).

From the SOCIETY.—Journal of the Ethnological Society of London, April, 1870.

From the AUTHOR.—L'Os Intermaxillaire de l'Homme, by Dr. E. T. Hamy.

From the SOCIETY.—Proceedings of the Asiatic Society of Bengal, No. 9, 1869, No. 1, 1870 ; Journal ditto, part i, No. 4, 1869.

FOR THE MUSEUM.

From R. B. N. WALKER, ESQ.—Skulls (3) from West Africa.

A paper by Mr. HODDER M. WESTROPP "On Phallic Worship," was read as follows :—

Human nature is the same in all climes, and the workings of this same human nature are almost identical in the different stages of its growth. Hence similar and analogous ideas, beliefs, and superstitious practices are frequently evolved independently among different peoples. These are the result of suggestions arising spontaneously in the human mind at certain stages of its development, and which seem to be almost universal.

As a remarkable instance of this, I have drawn up the following sketch of Phallic worship, which was one of those beliefs or superstitious practices which have sprung up independently, and which seem to have extensively prevailed among many nations.

It will acquire additional interest when it is considered that it is the most ancient of the superstitions of the human race, that it has prevailed more or less among all known people in ancient times, and that it has been handed down even to a very late and Christian period.

In the earlier ages the operations of nature made a stronger impression on the minds of men. Those ideas, springing from the constant ob-

servation of the modes of acting in nature were consequently more readily suggested to the minds of all races of men in the primitive ages.

Two causes must have forcibly struck the minds of men in those early periods when observant of the operations of nature, one the generative power, and the other the productive, the active and passive causes. This double mode of production visible in nature must have given rise to comparisons with the mode of proceeding in the generation of animals, in which two causes concur, the one active and the other passive, the one male and the other female, the one as father, the other as mother. These ideas were doubtless suggested independently and spontaneously in different countries; for the human mind is so constituted that the same objects and the same operations of nature will suggest like ideas in the minds of men of all races, however widely apart.

Nature to the early man was not brute matter, but a being invested with his own personality, and endowed with the same feelings, passions, and performing the same actions. He could only conceive the course of nature from the analogy to his own actions. Generation, begetting—production, bringing forth—were thus his ideas of cause and effect. The earth was looked upon as the mould of nature, as the recipient of seeds, the nurse of what was produced in its bosom; the sky was the fecundating and fertilising power. An analogy was suggested in the union of the male and female. These comparisons are found in ancient writers. “The sky,” Plutarch says, “appeared to men to perform the functions of a father, as the earth those of a mother. The sky was the father, for it cast seed into the bosom of the earth, which in receiving them became fruitful and brought forth, and was the mother.”

This union has been sung in the following verses by Virgil:—

“Tum pater omnipotens fecundis imbris æther
Conjugis in gremium lætæ descendit.”—*Geor. ii.*

Columella has related, in his treatise on agriculture, the loves of nature, or the marriage of heaven and earth, which takes place in the spring of the year.

These ideas bear a prominent part in the religious creeds of several nations. In Egypt the Deity or principle of generation was Khem, called “the father”—the abstract idea of father; as the goddess Maut was that of mother. The office of Khem was not confined to the procreation and continuation of the human species, but extended even to the vegetable world, over which he presided, when we find his statue accompanied by trees and plants; and kings offering to him herbs of the ground, cutting the corn before him, or employed in his presence tilling the land, and preparing it to receive the generating influence of the deity.

In the Saiva Purana of the Hindoos, Siva says: “From the supreme spirit proceed Purusha (the generative or male principle), Prakiti (the productive or female principle), and Tirue; and by them was produced this universe, the manifestation of the one god. . . . Of all organs of sense and intellect, the best is mind, which proceeds from Ahankara, Ahan-kara from intellect, intellect from the supreme being, who is, in fact,

Purusha. It is the primeval male, whose form constitutes the universe, and whose breath is the sky ; and though incorporeal that male am I." In the Kṛitya Tatwa, Siva is thus addressed by Brahma : "I know that Thou, O Lord, art the eternal Brahm, that seed which, being received in the womb of thy Sakti (aptitude to conceive) produced this universe ; that thou united with thy Sakti dost create the universe from thine own substance like the web from the spider." In the same creed Siva is the personification of the sun (which he is equally with Surya) or fire, the genial heat which pervades, generates and vivifies all ; and Bhavani, who, as the goddess of nature is also the earth, is the universal mother.

Among the Assyrians, the supreme god, Bel, was styled "the procreator"; and his wife, the goddess Mylitta, represented the productive principle of nature, and received the title of the queen of fertility. Another deity, the god Vul, the god of the atmosphere, is styled the beneficent chief, the giver of abundance, the lord of fecundity. On Assyrian cylinders he is represented as a phallic deity. With him is associated a goddess Shala, whose ordinary title is "Sarrat," queen, the feminine of the word "Sar," which means chief. Sir Henry Rawlinson remarks, with regard to the Assyrian San, or Shamas, the sun-god, that the idea of the motive influence of the sun-god in all human affairs arose from the manifest agency of the material sun in stimulating the functions of nature. In Phœnician mythology, Ouranos (heaven) weds Ghè (the earth), and by her becomes father of Oceanus, Hyperon, Iapetus, Cronos, and other gods. In conformity with the religious ideas of the Greeks and Romans, Virgil describes the products of the earth as the result of the conjugal act between Jupiter (the sky) and Juno (the earth). According to St. Augustin, the sexual organ of man was consecrated in the temple of Liber, that of woman in the sanctuaries of Libera, these two divinities were named father and mother.

In the month of April, when the fertilising powers of nature begin to operate and its productive powers to be visibly developed, a festival in honour of Venus took place at Rome, in it the phallus was carried in a cart, and led in procession by the Roman ladies to the temple of Venus outside the Colline gate, and then presented by them to the sexual parts of the goddess. This is only symbolising the same idea as expressed by Virgil in the *Georgics*. We find similar ideas in the religious creeds of America, and of the remote islands of the Pacific Ocean. According to the Indians of Central America, Famagostad and Zipaltonal, the first male and the second female, created heaven, earth, man, and all things.

The Tahitians imagined that everything which exists in the universe proceeds from the union of two beings ; one of them was named Taroataihetounou : the other Tepapa ; they were supposed to produce continually and by connection the days and months. Those islanders supposed that the sun and moon, which are gods, had begotten the stars, and that the eclipses were the time of their copulation.

A New Zealand myth says we have two primeval ancestors, a father and a mother. They are rangi and papa, heaven and earth. The

earth, out of which all things are produced, is our mother ; the protecting and overruling heaven is our father.

It is thus evident that the doctrine of the reciprocal principles of nature, or nature active and passive, male and female, was recognised in nearly all the primitive religious systems of the old as well as of the new world, and in none more clearly than in those of Central America ; thus proving, not only the wide extent of the doctrine, but also its separate and independent origin, springing from those innate principles which are common to human nature in all climes and races. Hence the almost universal reverence paid to the images of the sexual parts as they were regarded as symbols and types of the generative and productive principles in nature, and of those gods and goddesses who were the representatives of the same principles. The Phallus and the Cteis, the Lingam and the Yoni—the special parts contributing to generation and production, becoming thus symbols of those active and passive causes, could not but become objects of reverence and worship. The union of the two symbolised the creative energy of all nature ; for almost all primitive religion consisted in the reverence and worship paid to nature and its operations.

Evidence that this worship extensively prevailed will be found in many countries, both in ancient and modern times. It occurs in ancient Egypt, in India, in Syria, in Babylon, among the Assyrians, in Persia, Greece, Italy, Spain, Germany, Scandinavia, and among the Gauls. In Egypt, the phallus is frequently represented as the symbol of generation. According to Ptolemy, the Phallus was the object of religious worship among the Assyrians and also among the Persians. In Syria, Baal-peor was represented with a phallus in his mouth, according to St. Jerome. The Jews did not escape this worship ; and we see their women manufacturing phalli of gold and of silver, as we find in Ezekiel xvi, 17. Among the Hindoos a religious reverence was paid to the Lingam and Yoni, and among the Greeks and Romans to the Phallus and Cteis. Among the Teutons and Scandinavians, the god Fricco, corresponding to the Priapus of the Romans, was adored under the form of a phallus ; a similar god under a similar symbol was adored in Spain, whose name was Hortanes.

This worship has been found in different parts of America, in Mexico, in Peru, at Hayti ; it still prevails at the present day in a great part of India and Thibet. According to Mr. Stephens, the upright pillar in front of the temples of Yucatan is a phallus. We read in an ancient document written by one of the companions of Fernando Cortez : “In certain countries, and particularly at Panuco, they adore the Phallus (*il membro che portano gli uomini fra le gambe*), and it is preserved in the temples.” The inhabitants of Tlascala also paid worship to the sexual organs of a man and woman. In Peru, several representations in clay of the Phallus are met with. At Hayti, according to Mr. Artaud, phalli have been discovered in different parts of the island, and are believed to be undoubtedly the manufacture of the original inhabitants of the island. In one of the Marianne islands of the Pacific Ocean, on festive occasions, a phallus, highly ornamented, called by the natives *Tinas*, is carried in procession.

Among the simple and primitive races of men, the act of generation was considered as no more than one of the operations of nature contributing to the reproduction of the species, as in agriculture the sowing of seed for the production of corn, and was consequently looked upon as a solemn duty consecrated to the Deity; as Payne Knight remarks, it was considered as a solemn sacrament in honour of the Creator.

In those early ages, all the operations of nature were consecrated to some divinity, from whom they were supposed to emanate; thus the sowing of seed was presided over by Ceres.

In Egypt, the act of generation was consecrated to Khem; in Assyria, to Vul; in India, to Siva; in Greece in the primitive pastoral age, to Pan; and in later times, to Priapus; and in Italy, to Mutinus. Among the Mexicans, the god of generation was named Triazoltenti. These gods became the representatives of the generative or fructifying powers in man and nature.

The following curious passage from Voltaire (*Oreilles du Comte de Chesterfield*), borrowed from Cook's *First Voyage*, will show that almost similar views were entertained by a primitive race in the islands of the Pacific Ocean, which must have been suggested independently, from their complete disconnection with the ancient world. "The Princess Obeira, queen of the island of Otaheite, after having made us many presents with a politeness worthy of a queen of England, was anxious to be present some morning at our English service. We celebrated it with as much ceremony as possible. She invited us to hers after dinner; it was on the 14th of May, 1769. We found her surrounded by about a thousand persons of both sexes, ranged in a semicircle, and in a respectful silence. A very pretty young girl, slightly dressed, was lying on a raised bench, which served as an altar. The Queen Obeira ordered a handsome young man of about twenty to go and sacrifice. He uttered a kind of prayer, and ascended the altar. The two sacrificers were half naked. The queen, with a majestic air, taught the young victim the most proper manner to consummate the sacrifice. All the Otaheitans were so attentive and respectful, that none of our sailors dared to interrupt the ceremony by an indecent laugh. This is what I have seen; it is for you to draw your own inferences." "This sacred festival does not astonish me," said Dr. Goodman; "I feel persuaded that this was the first festival that men ever celebrated; and I do not see why we should not pray to God when we are going to make a being in his image, as we pray before we take our food, which serves to support our body; working to give birth to a reasonable being is a most noble and holy action. It is thus the first Indians thought, who revered the lingam, the symbol of generation; the ancient Egyptians, who carried the phallus in procession; the Greeks, who erected temples to Priapus."

The reverence, as well as worship, paid to the phallus in the early ages had nothing in it which partook of indecency: all ideas connected with it were of a reverential and religious kind. When Abraham, as mentioned in *Genesis*, in asking his servant to take a solemn oath, makes him lay his hand on his parts of generation (in

the common version, "under his thigh"), it was that he required as a token of his sincerity his placing his hand on the most revered part of his body; as, at the present day, a man would place his hand on his heart in order to evince his sincerity. Jacob, when dying, makes his son Joseph perform the same act. A similar custom is still retained among the Arabs at the present day. An Arab, in taking a solemn oath, will place his hand on his membrum virile in attestation of his sincerity.

The indecent ideas attached to the phallic symbol were, though it seems a paradox to say so, the result of a more advanced civilisation verging towards its decline, as we have evidence at Rome and Pompeii.

We may here introduce an extremely just and apposite remark of Constant in his work on Roman polytheism: "Indecent rites may be practised by a religious people with the greatest purity of heart. But when incredulity has gained a footing among these peoples, these rites become then the cause and pretext of the most revolting corruption." A similar remark has been made by Voltaire. Speaking of the worship of Priapus, he says, "our ideas of propriety lead us to suppose that a ceremony which appears to us so infamous could only be invented by licentiousness; but it is impossible to believe that depravity of manners would ever have led among any people to the establishment of religious ceremonies. It is probable, on the contrary, that this custom was first introduced in times of simplicity, that the first thought was to honour the deity in the symbol of life which it has given us. Such a ceremony may have excited licentiousness among youths, and have appeared ridiculous to men of education in more refined, more corrupt, and more enlightened times."

Three phases in the representation of the phallus, should be distinguished; first, when it was the object of reverence and religious worship; secondly, when it was used as a protecting power against evil influences of various kinds, and as a charm or amulet against envy and the evil eye, as at the postern gate at Alatri and at Pompeii, and as frequently occurs in amulets of porcelain found in Egypt, and of bronze in Italy; thirdly, when it was the result of mere licentiousness and dissolute morals. Another cause also contributed to its reverence and frequent representation—the natural desire of women among all races, barbarous as well as civilised, to be the fruitful mother of children—especially as among some people women were esteemed according to the number of children they bore, and as among the Mohammedans of the present day, it is sinful not to contribute to the population; as a symbol, therefore, of prolificacy, and as the bestower of offspring, the phallus became an object of reverence and especial worship among women. At Pompeii was found a gold ring, with the representation of the phallus on its bezel, supposed to have been worn by a barren woman. To propitiate the deity and to obtain offspring, offerings of this symbol were made in Roman temples by women, and this custom has been retained in modern times at Isernia, near Naples. Stone offerings of phalli are also made at the present day in a Buddhist temple in Pekin, and for the same object Mohammedan women kiss with reverence the organ of generation of an idiot or saint. In

India this worship has found its most extensive development. There young girls who are anxious for husbands, and married women who are desirous of progeny, are ardent worshippers of Siva; and his symbol, the Lingam, is sometimes exhibited in enormous proportions.

In the sixteenth century, St. Foutin, in the south of France, St. Ters at Antwerp, and in the last century Saints Cosmo and Damiano at Isernia, near Naples, were worshipped for the same purpose by young girls and barren women.

Sir Gardner Wilkinson records similar superstitious practices at the present day at Ekhnim in Egypt. The superstitions of the natives here ascribed the same properties to a stone in one of the sheikh's tombs, and likewise to that of the temple of Pan, which the statues of the god of generation, the patron deity of Panopolis (Ekhnim), were formerly believed to have possessed; and the modern women of Ekhnim, with similar hopes and equal credulity, offer their vows to these relics for a numerous progeny.

We may conclude with the following passage from Captain Burton, which exhibits similar customs among a rude and barbarous people of the present day: "Among all barbarians whose primal want is progeny, we observe a greater or less development of the phallic worship. In Dahomè it is uncomfortably prominent. Every street from Whydah to the capital is adorned with the symbol, and the old ones are not removed. The Dahoman Priapus is a clay figure, of any size between a giant and the pigmy, crouched upon the ground, as if contemplating its own attributes. The head is sometimes a wooden block rudely carved, more often dried mud, and the eyes and teeth are supplied by cowries. A huge penis, like the section of a broomstick, rudely carved, as similar Japanese articles, projects horizontally from the middle. The tree of life is anointed with palm-oil, which drips into a pot or a shard placed below it, and the would-be mother of children prays that the great god Legba will make her fertile."

Mr. C. STANILAND WAKE then read a paper, "On the Influence of the Phallic Idea in the Religions of Antiquity."

[*Abstract.*]

After showing that the phallic superstition originated in the desire for children, and in the veneration for the instrument through which this desire was gratified, the paper proceeded to consider the legend of the "fall," which is proved to have had a phallic basis, from the association with it of the serpent, the tree, and the cherubim, all of which embody phallic ideas. The legend itself was derived from a Persian source, although it originated with the Chaldeans. The paper then traced the worship of the pillar-god, the Syro-Egyptian Hermes-Thoth, and the deity symbolised by the *beth-el* of the Hebrew patriarchs, showing its connection with the Sun-worship practised, if not introduced, by Abraham, and the primeval worship of Saturn. The generative attribute of this deity had, however, more especial reference to *man*; and the bull, which afterwards became the symbol of the Sun-god, was used as the emblem of fecundity in *nature*. The peculiar symbol of the pillar-gods as sun-deities was the serpent. The progress of sun-worship was

shortly pointed out, and the development of the idea of "wisdom," attributed to the Aryan and Grecian deities. After referring to the deluge-legend, the paper concluded with a notice of the phallic character of Hinduism and Buddhism, and the phallic symbols of Christianity.

The CHAIRMAN having invited discussion on the above two papers,

Mr. VILLIN said: The paper which was first read does not seem to contain a single new fact, and repeats many errors already admitted to be errors. This paper is nothing but an abstract of Boudin's book on Phallic Worship; and Boudin's book is nothing else than a badly conceived compilation of earlier writers, every one of whose writings is teeming with errors. We cannot let this opportunity pass without pointing out some of the gross mistakes which are handed down to us as facts. All those who have read Boudin's book will admit that such a writer—however worthy of credit on other branches of anthropology, as he is undoubtedly—cannot for a single moment pass for an authority on the score of phallic worship. He indiscriminately repeats what he finds in old authors, without sifting facts from exaggerations, or questioning the veracity, judgment, or impartiality of those authors. It is the business of a learned society to reject authorities, however old or respected they may have been, if, after having been submitted to the ordinary rules of criticism, the facts enunciated cannot apparently be maintained. The author of this paper, in the very first sentence, endorses Boudin's paradox, "that human nature is the same in all climes"; and from this paradox he naturally infers that phallic worship has been universal. But, in the first place, every anthropologist will grant that, if the genus *Homo* is the genus *Homo* in all climes, *human nature* is, or appears to be, very different in China or Africa from what it is in Europe or America. If the doubt on this point was not shared by almost every one, would the Anthropological Society exist? Would not a Londoner be quite as good a subject for study as twenty different races, for the purpose of knowing what is and what is not human nature? In the second place, if it be proved that Phallism has really existed as a worship or religion, the proofs are still wanting for us to admit that this religion was at any time universal, for most of the so-called proofs which were enumerated to us to-night are mere assertions. It will be sufficient for me to point out a few of the errors contained in this paper in order to show how cautious we should be in the collecting of our facts. Mr. Westropp takes for granted all he finds in Boudin, and consequently he quotes St. Augustine, St. Jerome, Arnobius, de l'Estoile, and an unknown Spanish writer—a companion, it is said, of Columbus—who is cited in Italian, although why not in Spanish does not appear. The author does not seem to recollect that the writings of the early fathers of the Church should only be read with the greatest caution when they profess to record the history of the times. They had an interest to blacken Roman Society and to contrast it with the usual purity of the Christians—they were partisans—hence very partial indeed. When St. Augustine assures us that "one of the most respectable Roman matrons crowned the Phallus in public"—a ceremony which must have been very rare

in the fourth century, considering—firstly, the religious indifference of Roman Society; and secondly, that Phallism was entirely extinct, if it had existed as a worship at all, at that period,—when we are told this, we *may* believe the ceremony of the coronation to have taken place, improbable as it seems; but the lady officiating must have been, not a respectable matron, but a prostitute—in the same manner that the Goddess of Reason of Robespierre, during the French Revolution, was personated by a woman of a loose character, to say the least. We must not forget that St. Augustine wrote his book as an answer to the accusations of the Romans against the Christian Roman Government, which had proved itself incapable of preventing the taking of Rome by Alaric. The father's reply was that the abominations of Roman Society were deserving of the punishment inflicted by the Barbarians; and, to make a good case of his pleading, he gleaned all that could be said against Pagan Rome, and exaggerated individual crimes or individual cases into vices universally pervading the whole community. In his eagerness to gather a long nomenclature of crimes, he sometimes lost his judgment altogether: he accepted as facts, and represented as crimes chargeable against Roman Society, the adventures of Lucius in the "Golden Ass" of Apuleius, and he took a laughable romance for a true story, admitting thereby his belief in the possibility of Lucius being changed into an ass. It is, however, historically and undoubtedly established that the morals of the Romans were never better than under the Antonines, the period during which Apuleius lived and which St. Augustine takes pains to make especially abominable.

Livy, it is true, speaks of the advisability of finding a remedy for the looseness of the morals in his time, but in every country there have been periods when it was necessary for the legislature to check vices. St. Jerome and Arnobius are quite as unreliable as St. Augustine. At Pompeii the Phalli found at the outward entrance of some houses with the inscription "*Hic habitat felicitas*," were not, as is taken for granted, protecting symbols, but merely signs to houses of tolerance. De l'Estoile speaks in his journal of St. Foutin, St. Vit, in France, as indicative of depravity, and Boudin takes these two Saints to be Phallic personifications, whereas the real fact is that Foutin is the mispronunciation and the misspelling of St. Photin who, Eusebius tells us, died a martyr at Lyons; and St. Vit is, in the same way, the corruption of St. Avit, Bishop of Clermont in Auvergne, in the sixth century. In Mexico, after the anonymous journal of a supposed companion of Cortez, we are told in Italian:—"In certain countries they adore *il membro che portano gli uomini fra le gambe*." Why should we not rather follow the version of the best of all Spanish historians of the Conquest—De Solis? This author has sifted his facts and written his history on documents; he is very exact in describing the manners of all the American nations in contact with Cortez, but he does not say one word about Phallism, and certainly his authority is preferable to one which he himself has rejected, namely, that of the so-called companion of Cortez. And, moreover, if this journal be not the spurious production of a novel writer, this companion of Cortez was, no

doubt, an obscure man, since he left no signature to his book ; he was not one of the officers, who are all known by name, and his records are those of a clever man, perhaps, but of a superficial observer ; after all, he did not know the language, hence he must often have been mistaken by mere appearances. A Central African who would now visit Europe without knowing our history or our language would tell his countrymen upon his return home : "The Europeans adore and worship two pieces of wood crossed,"—for, deceived by what he would have seen in the churches, he would take for a God what is, in reality, a mere symbol. The Popol Vuh in no way whatever alludes to Phallism, so far as I recollect, and surely the sacred writings would if there had been a cause for it.

When Mr. Westropp adds something to Boudin, it is generally a mistake which he adds to those already known. He quotes a passage of Voltaire's writings as being an extract of *Cook's Journal*, whereas he should have given us *Cook's Journal* itself. Cook, after relating the religious ceremonies performed in the morning, which had absolutely nothing Phallic in them, says : "the day thus begun with acts of devotion, was concluded with those of lewdness (not in the temple, nor on the altar, as Voltaire says) exhibited by the natives by way of entertainment." That Voltaire should have written a lively tale about this in one of his philosophical "Romans" is not surprising, but that Mr. Westropp should have mistaken the humour and wit of Voltaire for Cook's relation—which, as everyone sees, conveys no idea of Phallism—is a proof of the author's indifference as to authorities. Leaving to others the task of criticising some other points of the paper, I regret to have to repeat that Mr. Westropp has not given us a single new fact nor a single good argument. A scientific paper should be something more than a string of assertions more or less discriminately collected. As regards Phallism, it seems to me that we certainly are not yet in a position to say whether it was a religion or a symbol, still less whether it was universal. It will require a large accumulation of facts, indeed, before we can arrive at anything like certainty on these points.

Dr. CHARNOCK said etymology was important in connection with the paper. Mr. Wake (citing Clemens Alexandrinus, who, by the bye, was not a first-rate authority) stated that the name Eve or Heva means a "female serpent." The derivative language was not given. The Hebrew name *Havvâh* was synonymous with the Greek name *Zwê*, and was from a verb signifying "to live." Again, the author of the paper stated that *set* in Hebrew, as well as in Egyptian, means a pillar ; he identified *Seth* with the Phallic *Thoth* ; *set*, by change of the initial letter, becoming *Tet*, one of the names of Thoth. The Coptic word for a pillar is *shēbē*, not *set*. The name *Thoth* had been by some compared with *Teut*, the German deity, and with *Θεός*, *Zeus*, the latter two words being of Sanskrit origin. Perhaps the most reasonable derivation of the name of the Egyptian deity was from the Memphitic *Iwt*, which in the Sahidic dialect is *Θιwt*, and is equivalent to *pater*. The derivation of Baal-tamar is still more important. Mr. Wake rendered it "Baal is a pillar." The primitive meaning of Baal

is lord, master ; but the word is often found in local names, where it signifies a place, sanctuary, town. No doubt *tamar* was used for a column, but that was not the primitive meaning of the word : and Baal-tamar, which was the appellation of a place mentioned in Judges, could have no other meaning than "place of palm trees," with which might be compared Bildulgerid in Barbary, which in Arabic signified "town of date trees."

The following gentlemen also took part in the discussion :—Mr. James Fergusson, Mr. Bouverie-Pusey, Mr. Robert Des Ruffières, Mr. Lewis, Mr. Charlesworth, Mr. John Jones, Mr. Moncure Conway, Mr. Walter Dendy, Rev. Mr. Buckle, Mr. McSweeney, Mr. Simpson, Mr. Avery, Mr. Rivington, and the Chairman.

The meeting then adjourned.

APRIL 19TH, 1870.

DR. BERTHOLD SEEMANN, V.P., IN THE CHAIR.

THE minutes of the previous meeting were confirmed.

John Colam, Esq., 105, Jermyn Street, St. James's ; and David Mitchell Henderson, Esq., 1, Carden Place, Aberdeen, and Old Calabar, West Africa, were elected Fellows. Dr. D. Lubach, of Kampen, Holland, was elected a Corresponding Member.

Mr. A. L. LEWIS exhibited two Australian Skulls, lately placed by him in the Society's Museum.

A paper, by Mr. ALFRED SANDERS, was read "On Mr. Darwin's Hypothesis of Pangenesis as applied to the Faculty of Memory." (The paper will appear in full in the *Journal of Anthropology*).

[*Abstract.*]

The first question to be asked was—Is thought a function of the brain ? The author answered it in the affirmative, and cited facts and appearances in physiology, anatomy, pathology, and physics in support of his opinion. Thought could not be considered as a product of the brain-cells any more than light could be produced by the cells of the retina, yet the brain-cells were necessary for the communication between the mind and the external and internal world, and were exhausted in the process of thinking and willing in the same manner as the cells of the retina were exhausted and required renewal in the process of seeing. Passing to the consideration of the faculty of memory, the author combated the theory of Mr. John Stuart Mill, that the mind is a series of feelings and nothing more, and that memory is an ultimate fact incapable of explanation. The remainder of the paper was devoted to the application of Mr. Darwin's hypothesis of Pangenesis, which the author maintained was capable of explaining the difficulty raised by Mr. Mill ; it being granted that the mental faculties depend upon the brain, and that the brain-cells give off self-propagating gemmules indefinitely, everything becomes plain. After

describing in detail the action of external impressions on the brain at different times in the life of an individual, some of the many conditions favourable or the reverse to the retention of such impressions, and the dormant and active states of the brain-cells, the author entered into a consideration of the growth of the supposed gemmules, their action at maturity, and their power of self-propagation.

Mr. KESTEVEN stated that he had undertaken to read Mr. Sanders' paper in his absence, simply for the reason that it contained many purely technical expressions, probably unintelligible to many present, which he, as a member of the medical profession, would be ready to explain, if requested so to do. He then remarked that, as he should have occasion to dissent entirely from the author's views, and to give the reasons for his difference of opinion, he thought it would be but right that he should, in the first place, put before his hearers a clear statement of what Darwin's hypothesis of Pangenesis is, that they might be able to judge how far it is possible to apply it to the explanation of the phenomena of memory. Mr. Kesteven then read the following extracts from Mr. Darwin's work* :—"Everyone would wish to explain to himself, even in an imperfect manner, how it is possible for a character possessed by some remote ancestor suddenly to reappear in the offspring; how the effects of increased or decreased use of a limb can be transmitted to the child; how the male sexual element can act, not solely on the ovule, but occasionally on the mother-form; how a limb can be reproduced on the exact line of amputation, with neither too much nor too little added; how the various modes of reproduction are connected, and so forth. I am aware that my view is merely a provisional hypothesis or speculation; but, until a better one be advanced, it may be serviceable by bringing together a multitude of facts which are at present left disconnected by any efficient cause. As Whewell, the historian of the inductive sciences, remarks :—"Hypotheses may often be of service to science, where they involve a certain portion of incompleteness, and even of error." Under this point of view, I venture to advance the Hypothesis of Pangenesis, which implies that the whole organisation, in the sense of every atom or unit, reproduces itself" (p. 357). "The cells or units of the body are generally admitted by physiologists to be autonomous, like the buds on a tree, but in a less degree. I go one step further, and assume that they throw off reproductive gemmules. Thus, an animal does not, as a whole, generate its kind through the sole agency of the reproductive system, but each separate cell generates its kind. It has been often said by naturalists that each cell of a plant has the actual or potential capacity of reproducing the whole plant; but it has this power only in virtue of containing gemmules derived from every part. If our hypothesis be provisionally accepted, we must look at all forms of a sexual reproduction, whether occurring at maturity or as in the case of alternate generation during youth, as fundamentally the same, and dependent on the mutual aggregation and multiplication of the gemmules" (p. 403). This "provisional hypothesis" assumes that the

* *The Variation of Animals and Plants under Domestication.* By Charles Darwin, M.A., F.R.S., etc. Vol. II. 1868. Pp. 357 and 403.

development of each being "depends on the presence of gemmules thrown off at each period of life, and on their development at a corresponding period in union with preceding cells." This is wholly different from the hypothesis put forth by the author of the paper, which assumes the giving off of gemmules at irregular periods, in irregular numbers, and without further development, or organic relation, and union with other cells. There are, it is true, within the brain, as shown by the microscope, countless cells,* cell-nuclei, together with nerve-fibres and blood-vessels, but no trace of the alleged gemmules have been seen under the highest powers of the microscope. This is one reason why he must decline to adopt the conclusions of the author. Mr. Darwin, true philosopher as he is, with the caution of the philosophical naturalist, suggests a possible state of things to explain a known series of phenomena, but this is widely different from the transfer of what is thus modestly put forward to express a generally felt difficulty, to the confident and unhesitating explanation by a gratuitous assumption of one of the most obscure phenomena of mind. Mr. Kesteven further observed, as a reason for demurring to Mr. Sanders' explanation, that, in his opinion, it by no means so clearly and closely accounts for the phenomena of memory as that view which is now generally held by physiologists, viz., that there is truly a memory existing in every portion of the body. This has been well put by Dr. Maudsley in his lectures recently delivered before the College of Physicians. "In every nerve-cell there is memory, and not only so, but there is memory in every organic element of the body. The virus of small-pox or of syphilis makes its mark on the constitution for the rest of life. We may forget it, but it will not forget us, though, like the memory of an old man, it may fade and become faint with advancing age. The manner in which the scar of a cut in a child's finger is perpetuated, and grows as the body grows, evinces, as Mr. Paget has pointed out, that the organic element of the part remembers the change which it has suffered. Memory is the organic registration of the effects of impressions, the organisation of experience, and to recollect is to revive this experience—to call the organised residue into functional activity." All the phenomena of reflex nervous action show it. To mention one instance: a frog that has had its head cut off will, if any irritant substance be applied to its hind legs, make the ordinary efforts to wipe off the irritation. In injuries to the head, in fevers, and in delirium, as mentioned by the author, thought and memory are suspended and held in abeyance. But this is not all—in fevers, in delirium, in insanity, words and language have been known to have been recalled, although all memory of them had been lost for many years, or for nearly a whole life before. This revival of dormant mental impressions constitutes those mental states that have been somewhat metaphorically called "brain photographs." The speaker here related several cases of this kind, and again quoted Dr. Maudsley in support of his view. "In a brain that is not disorganised the organic registrations are never actually forgotten, but endure while

* Mr. Kesteven had on the table a microscope and numerous sections of brain, spinal cord, etc., to show their structure.

life lasts ; no wave of oblivion can efface their characters. Consciousness, it is true, may be impotent to recall them ; but a fever, a blow on the head, a poison in the blood, a dream, the agony of drowning, the hour of death, rending the veil between our present consciousness and these inscriptions, will sometimes call vividly back, in a momentary flash, much that seemed to have vanished from the mind for ever. In the deepest and most secret recesses of mind, there is nothing hidden from the individual self, or from others, which may not be thus sometimes accidentally revealed." Mr. Kesteven concluded by expressing his regret that Mr. Sanders was not present to defend his thesis, since, for the foregoing reasons, he could not but regard it as wholly wanting in proofs, inconsistent with known facts, and a misapplication of an hypothesis legitimately advanced by Mr. Darwin (provisionally only) to explain the known facts of reproduction.

The Rev. DUNBAR I. HEATH said that this paper contained a well-considered application of Darwin's theory of Pangenesis. Now, the first necessity would, of course, be to understand what this famous theory really is. When the theory itself is mastered, the application of it will more easily follow. The essence, then, of Pangenesis is that, instead of the embryo or ovum being the production of a gland called the ovarium, it is the production of the whole body. Every unit of the body produces its seed or gemmule. The genesis is not ovarian genesis it is pan-genesis, or the genesis of the whole. The conception that a gland should secrete out of human blood the seed of a human being is rude and rough ; and, moreover, it affords no explanation at all of the likeness of each being to its ancestors. We have been made familiar lately by Dr. Lionel Beale and others with some of the phenomena of protoplasmic units. They live, they grow, they die. Add, then, the further conception that they propagate, or throw off gemmules. These gemmules are free gemmules, circulating by thousands of millions in the blood. It will be said that if this be so they will be cast out of the body with other useless or used matter. But no matter is cast out except by its proper method. Carbonic acid by the lungs, perspiration by the skin, and so on. The refuge or landing stage for the gemmules is in the ovarium. Here the same reasons which constituted neighbouring protoplasmic units in any part of the body to be neighbours would cause the gemmules deduced from those units to be neighbours also. The muscle unit, the nerve unit, the bone unit of the finger, for example, send out their free gemmules, and muscle gemmules, nerve gemmules, and bone gemmules become neighbours in the ovarium, and are surrounded by albumen and fat, and thus form the germ. Ancestral gemmules, actually derived from the blood of ancestors, find their way into this resting place, and account for atavism or ancestral likenesses. Whatever may be thought of this theory, said Mr. Heath, it is at any rate the only one hitherto given to account at all for the facts. This property it has, in common with Darwin's other great theory of change of species by natural selection, no other theory worth speaking of exists to account for the phenomena. The application of this theory made in the paper to the phenomena of

memory is simple and comprehensible, and it, too, is alone in the field as the phenomena have never otherwise been accounted for.

Mr. GEORGE ST. CLAIR was convinced that Mr. Darwin in his theory expressed a great truth ; but he thought that the author of the paper did not support the theory in the right sense.

The discussion was further sustained by Dr. Langdon Down, Mr. Dendy, Dr. Ellis, M. Robert Des Ruffières, and the Chairman.

In reply to the several speakers, Mr. KESTEVEN stated that he declined the challenge to discuss the nature of mind in the abstract ; the author of the paper having narrowed its limits to the materialistic view, it would be beyond its scope to open up the metaphysical argument. To the statement that thought is a function of the brain, it had been objected that, if it were so, it should be subject to measurement in like manner as the blood and the air, with reference to the functions of the heart and lungs. He would remark that thought, as the function of the brain, was capable of measurement, inasmuch as the gradual manifestation of mental acts was traceable *pari passu* with the appearance of traces of a nervous system, and that with the greater development and complication of this in accordance with increasing complexity of surrounding conditions, the more distinct becomes the manifestation of mind, until the highest form is reached. That where no brain or its analogue exists, there is no thought, and that where brain is oppressed, as in disease, or by injury, thought is effaced or suspended. Therefore, in this sense of the word, thought is susceptible of measurement. He might, therefore, affirm that it was physiologically exact to say that thought is a function of the brain. Referring to the experiment with the decapitated frog, allusion was made to the statements recently made in the newspapers as to the mental phenomena said to have been exhibited by the heads of decapitated criminals. The answer was that, even if true, they were but instances of the reflex or involuntary movements to be seen in the lower forms of animal life : but it could not be said that such movements were signs of mind, or proofs of consciousness of pain. It should, however, be borne in mind that as Mr. G. H. Lewes had stated—other like experiments had altogether failed to produce any such results.

There can be no doubt that the influence of Mr. Darwin's writings and researches had been immense—indeed incalculable—but some limitation should be put to the appropriation of his authority by every wild theorist. The doctrine of "natural selection," for instance, is widely different from his provisional theory of "pangenesis," and is so treated by Mr. Darwin himself—the one he lays down as his deliberate conclusion from a vast array of facts ; the other he hesitatingly puts forward as a suggestion that may, perhaps, solve a difficulty. Even in this hypothesis the gemmules are restricted to the reproduction of their kind—*i.e.* of the structures whence they emanate ; they are not by Mr. Darwin charged with the function of giving rise to a train of phenomena wholly of another kind, as is the case in the application thereof by Mr. Sanders, an application which, after all, does but restate the abstruse nature of that endowment which we term memory.

Mr. GEORGE C. THOMPSON contributed the following note on "Con-sanguineous Marriages":

The question to be solved is—"Is there any occult malign influence in the fact of blood-relationship between parents, the effects of which exhibit themselves in the offspring in a variety of ways?" If the arguments, by which the theory of the occult influence are supported, are examined, they will, I think, be mostly found to come under one of the following types:—

1. A and B, being cousins, marry, and have so many diseased children.

2. In such and such an asylum n per cent. of the inmates are children of blood-relations, while marriages between such relations are (assumed to be) m per cent. of all marriages—(n , of course, being a much greater number than m).

Instances of the first type are calculated powerfully to affect the imagination, but can hardly be considered of much scientific value.

With regard to the second type, the blood-relationship of parents appears to be regarded in a very wide sense on the one hand, and on the other there appear to be no reliable means employed of ascertaining the value of m ; and there is nothing to shew that if relationships as distant were recognised in one case as in the other, there would be any discrepancy between m and n .

Some time ago the French prefects were directed to register the degree of relationship (where any existing) between persons marrying. I am not aware if the results have been published; but they could no doubt be obtained on application to the proper quarter. From a daily examination of the marriages announced in the *Times* for a period of about two months, I found that in just about one per cent. of the whole number the family names of bride and bridegroom were the same. To arrive at the percentage of cousin marriages, this figure (after making a small deduction to allow for those cases in which identity of name is fortuitous) must be multiplied by some number expressing the ratio of the whole number of a man's marriageable cousins to those of them bearing the same surname as himself. What this number may be is not very easy to calculate; but, taking the above data for what they are worth, there would appear nothing improbable in marriages of cousins, up to children of the same great-great-grandfather, being eight or ten per cent. of all marriages. This is a much higher figure than that assumed by Mr. Mitchell, who says the average of cousin marriages in Great Britain is probably not more than one in sixty or seventy (see vol. ii, *Memoirs Anthropological Society*). If, however, after every verification has been applied, the number n is still found to be greater than m —this does not necessarily prove the existence of the occult influence, as the phenomenon may be accounted for by the principle of inheritance. Suppose one hundred families, or tribes, two of which are tainted with a certain tendency (x) which, when inherited from both parents, becomes some specific evil, say (x^2). Suppose, further, that each tribe contains one hundred men, and that these marry—one within his own tribe, and the others into each of the ninety-nine stranger tribes.

Then, there will be in all ten thousand marriages, of which one hundred, or one per cent., will be between relations, so to speak (x^2) will occur in four instances—once in the marriage within each of the tainted tribes, and twice in the intermarriages between them—that is, *half* of the persons exhibiting (x^2) will be children of relations, while marriages between such relations are only one per cent. of the whole.

I believe the way to the solution of the problem lies in the collection and examination of crucial instances bearing upon the following points:—

1. When the defects commonly attributed to relationship of the parents are exhibited, are the germs of these defects traceable in the parents or their families?

2. When the medical pedigree of the parents is faultless, are the children sound and healthy?

3. When any particular excellence occurs in the parents' family, is it transmitted to the children in increased force?

Some of the members of the Society could probably supply materials for an investigation based on some such principles as I have indicated, and I trust the importance of the subject may lead to its being undertaken.

Dr. LANGDON DOWN said that, after an examination of five thousand persons with reference to the question of interbreeding, he had arrived at the conclusion that the practice was not only not necessarily injurious, but that, by methodical and judicious selection in the marriage of relations, an improved race of men might be obtained. He had examined closely into the antecedent histories of a large number of cases, in which the supposed cause of deterioration was consanguineous union of parents, but in nearly all he had been able to establish sufficient cause for the deterioration other than the relationship. Doubtless, where there was constitutional taint, the intermarriage of relations tended to intensify the evil in the offspring.

Capt. BLAIR cited in support of that view the case of a people on the Ganges, while other speakers adduced conflicting evidence.

The papers for the next meeting, May 3rd, were announced, and the meeting adjourned.

MAY 3RD, 1870.

DR. R. S. CHARNOCK, V.P., IN THE CHAIR.

THE minutes of the previous meeting were confirmed.

Moore A. Cuffe, Esq., LL.D., 9, Camden Crescent, Bath, was elected a Fellow.

The following list of presents was read, and the thanks of the meeting were voted to the respective donors ; viz.,

FOR THE LIBRARY.

From the SOCIETY.—Transactions of the Geological Society of Glasgow, vol. iii, part 2.

From the EDITOR.—Nature, to date.

From the SOCIETY.—Proceedings of the Royal Society, No. 118.

From the AUTHOR.—Insanity in Wiltshire. By Dr. Thurnam.

From the SOCIETY.—Proceedings of the Asiatic Society of Bengal, No. 2, 1870.

From the ASSOCIATION.—Journal of the East India Association, vol. iv, No. 1.

From the EDITOR.—The Food Journal.

From the EDITOR.—Scientific Opinion, to date.

From the SOCIETY.—Bulletin de la Société d'Anthropologie de Paris, vol. iv, f. 4, 1869.

FOR THE MUSEUM.

From A. L. LEWIS, Esq.—Two Aboriginal Australian Skulls.

Lieut.-Colonel W. ROSS KING, F.R.G.S., read a paper entitled “The Aboriginal Tribes of the Nilgiri Hills.” (The paper appeared in full in the *Journal of Anthropology* for July 1870.)

[Abstract.]

The author, who was three years among the Nilgiri tribes, viz., the Khotas, Erulas, and Kurumbas, described in turn the characteristic features and peculiarities of each, with detailed information as to their very curious social customs, and religious rites and ideas ; showing the marked distinctions existing in every point between tribes occupying the same area, and in constant communication with each other ; pointing out the fact that each people retained its own language ; and their remarkable isolation from the surrounding enormous population of the plains. The striking similarity between the rites, practices, and monuments of the Todas and those of the ancient Celts of Britain was shewn ; a passing allusion was made to the evidences of an early western migration as traceable through intervening countries in the existence of similar rites and customs ; and the presence on the Nilgiri hills of Druidical circles, cromlechs, kistvaens, and tumuli, precisely similar to those so well-known in our own country, was described. While commenting on the analogies thus apparent between the ancient Celts, and some of the Hill Tribes, the author took occasion also to remark on their similarities in other respects to the Jews of old, to the Kaffirs, and to the ancient Romans, not as being likely to lead to any theory of origin in those quarters, but as possibly qualifying the re-

liance to be placed on every point of Celtic resemblance. In conclusion, the author, who illustrated his paper by the exhibition of several drawings, and of some interesting native ornaments, etc., summed up the various theories prevailing as to the probable origin of these tribes, of whose history we are still so ignorant, and recommended the subject to the Society as one worthy of their investigation.

The CHAIRMAN said the author of the paper spoke of the Nilgiri as "*otherwise* called the Blue Mountains of the Deccan." Now, the name itself was a Sanskrit compound signifying "Blue Mountains." Major King mentioned five hill tribes of the Nilgiri. Other writers gave the same number; but called two of these Buddagur and Gohata, which were perhaps the original forms of the names *Vadaca* and *Kohta*. It was stated that the Khotas eat dead cattle and putrid flesh, and that the Erulas sacrifice a cock to propitiate evil spirits. Many other peoples were fond of carrion, especially the gipsies, and it seemed to agree with them very well. The Greeks sacrificed cocks. Socrates offered up a cock to Æsculapius. Polyandry was formerly practised by the people of Taprobane, and by many African tribes mentioned by ancient writers, as Herodotus, Pomponius Mela, Pliny, Solinus, and Diodorus Siculus. As Dr. Seemann had remarked, the custom was also anciently in vogue in Great Britain. It was so stated by Cæsar. With respect to the Roman coins found in the Deccan, Alexander did not get farther than the Punjâb; Seleucus penetrated to the banks of the Ganges. The coins in question, no doubt, found their way into the Deccan by other means. Before the foundation of Alexandria, the trade with India was carried on by the Arabs of Malabar, with the Arabs of Hadramaut, and also with the Phœnicians, by way of the Persian Gulf. After the foundation of Alexandria, it was almost entirely in the hands of the Alexandrine merchants, who traded between Berenice, on the Red Sea, and Mangalore, on the Malabar Coast, to which port the wares of the East were brought by native traders; and it was probably by these means that the coins in question found their way into the Deccan, a term, by the bye, properly applicable to the whole of Hindústân south of the Nerbudda. The migration of the Celts from Hindústân to the West was mere conjecture, the statement not being supported by any evidence whatever. On the contrary, it was a matter of history that the Galli crossed into Asia Minor, where they were, by the Greeks, called Galati, and the country they inhabited Galatia. If the Celtic peoples had originated in India, they would have left vestiges in the geographical names, none of which could be traced to any of the Celtic languages. On the other hand, that they had, at some time or other, occupied nearly the whole of Europe, was proved by the fact, that most of the river names are of Celtic origin. The so-called Druidical remains in India and elsewhere might be the work of any people. There was at present no evidence that the dolmen, etc., were erected by the Celts; and, indeed, it had not yet been satisfactorily proved what were the purposes for which they had been erected. It had been attempted to show that the Celtic dialects were derived from an oriental source; but it was doubtful whether any Celtic

words could be traced to the Asiatic, except through the Greek, Latin, and derivative languages.

Mr. Lewis, Mr. Bouverie-Pusey, Captain Blair, Dr. Seemann, and Mr. Dendy, also took part in the discussion.

The author then replied, and the meeting adjourned.

MAY 19TH, 1870.

(Held at St. James's Hall.)

DR. BERTHOLD SEEMANN, V.P., IN THE CHAIR.

THE minutes of the previous meeting having been read,

THE CHAIRMAN said: This is the first time in the annals of this Society that the Chairman is able to welcome at its meeting the fairer portions of mankind; and their presence is a proof that they do not think us quite as black as we have been painted. As a Society which has for its object the whole study of man, individually and collectively, we have had to deal with questions of great political and social importance; and, in discussing them, may have given pain where none was meant to be given. As a Society, we have no opinions whatsoever on any anthropological topic; but we claim absolute freedom of discussion of any subject that falls within our legitimate province. The subject brought forward to-night is, fortunately, one that will call forth no angry passions, no party feeling, no religious rancour. Music has been termed a universal art, and with good reason. We find it practised from the earliest ages to our own times, and from the equator to the poles; and as yet no nation has been met with that is an entire stranger to it. Music has also been called, but with much less good reason, a universal language. That every feeling which agitates the human heart, good or bad, can be expressed in music, or that we can concentrate greater intensity of feeling in a single musical note than in pages of writing, few will venture to dispute. But it is quite an open question whether it is a universal language, understood by all mankind alike. I make bold to doubt whether, even amongst the nations of Western Europe, intimately connected, as they are, by close and frequent intercourse, the music of the one is interpreted in the same sense by the others. By travelling eastwards we find that there is certainly a different language of music. Songs of joy, and even dance-accompaniments, are no longer, as with us, in the major keys, but always in the minor. Proceed still further eastwards, to the Indies, and you have to endure, in listening to the people's music, a monotony almost unbearable to European modes of thought. Continue your journey amongst the great Mongolian races, and the bulk of what you have to listen to is positively painful to your ear; and your greatest puzzle is how what is so painful to you should give positive pleasure to them. Again, cross over to America, and you find the aborigines uttering musical

sounds, no doubt full of meaning to them, but altogether unintelligible to us, and to our habits of thinking without any ending. Mr. Chorley, whose long study of the subject peculiarly qualifies him for the task, has undertaken to read to-night a paper on "Race in Music", which an eminent artist, Mr. Dannreuther, has kindly consented to illustrate. It has cost us no little persuasion to induce Mr. Chorley to consent to compress a subject so vast into so small a compass; but he *has* said *A*, and you shall now hear yourself when he says *B*.

Mr. HENRY F. CHORLEY then read the following paper, on

Race in Music.

Every one recollects Madame de Stael's famous request to some philosopher or metaphysician newly introduced to her:—"Tell me your system in ten words", said she. I have been reminded of her speech every hour since I have undertaken to handle the subject of national music within the compass of a single lecture. It is only an Ariel who can put a girdle round the earth in forty minutes. I trust that the difficulty will be taken into account by my audience; and that, if what I offer to them seem flimsy, the fault may be laid to inevitable circumstances, and not to flippant negligence on my part, when presenting myself to a society of such solidity and importance as that which I have the honour to address. I had already treated the subject within wider limits; having, some years ago, presented a course of lectures on it at the Royal Institution. But I have not referred to the literary materials I then gathered, nor am I about to offer you an abridgment of past discourses. My opinions remain unchanged, the subject having undergone no new developments in the interim. And I say this with some confidence, because, in the most valuable book recently published on the matter, by Herr Engel, a sound musician (whereas I am only an amateur), I find such a general coincidence of views with those I presented, as to encourage the opinion, that all persons who search honestly into the question must arrive at the same conclusions.

Having prepared my lectures for publication, I have purposely kept them back, with the view of enriching them with additions. But these present themselves sparingly, though the matter of my discourse is re-arranged. I shall offer few, if any, new illustrations; and, having examined more than three thousand tunes on the former occasion, I do not conceive that I could much amend the selection, as illustrating my meaning.

I assure you that I have been totally unable to satisfy myself in the fulfilment of this engagement. I do not say this to deprecate criticism or censure, because all pleadings of the kind are as paltry as the proceeding of the reduced Irish gentlewoman, who cried mutton-pies, in the streets of Dublin, in a soft voice, adding "I hope nobody hears me", but to explain that I have found the subject too impracticable in its width of scope for any hands to grasp within the short time allotted to me. What I offer, then, are fragments, not a completely cemented narrative—fancies, rather than theories. I shall be grateful if I can be listened to, with reference to what I have said.

Let me begin with an expression of due and deep gratitude, for the benefits which every student of such a subject as I am touching to-night must derive from the researches of thoroughly instructed men. But I cannot forbear from following this up by speculating on a point which, I fancy, has been too much overlooked, in respect to the authenticity of ancient records. Has it not been too largely taken for granted that the pictures in eastern, or southern, or northern tombs and temples are to be relied on as technically exact representations? The strings of pictured harps have been counted; and theories as to their scale and compass consequently stated, as if the above pictures were so many daguerrotypes. Now, I would submit that, if one accessory part of a picture be faithful, the other more principal features should be assumed so likewise. I would ask any one of my audience, by personal travel and anthropological research made more experienced than myself, to accredit the strange groups of figures in the tombs and in the temples of the East, or on the plates from the Chinese ovens. In one of the latter—I happen to be the happy possessor of the specimen—the picture is of a delicious creature, with a round face and no practicable feet, who is withheld from an elopement with as languidly delicious a gentleman as herself, by a father protruding from the upper window of a pagoda, who arrests her, by grasping her ankle—across a small canal-bridge half a mile off!—I do not believe in the literal truth of delineations of humanity, male or female, as derived from such productions; therefore, I do not accept the number of strings counted as canonical to the Egyptian harps, on the authority of incomplete painters. We know, from our own ancient missals, how every representation is traditional; let sincere hearts have urged careful hands ever so earnestly. The cyclamen flower—the *herba benedicta*—was indicated in their florid borders. But which, among the most experienced of botanists (I speak to the Chair), would venture to discourse botanically on the strength of such pictured records? Insomuch as I have felt this difficulty—I have felt always the impossibility of theorising or systematising on the strength of the evidence furnished by idealising recorders. Literal truth in the notation of Art is a possession which the world has gained but recently—it may be, at the expense of blind faith and imagination. We may have no more such pictures as Albert Durer and Memling painted—where the expression of the faces is so immortally admirable—and yet in which the great mystery of the Crucifixion would be represented as passing under the shelter of a grim Gothic town, with its fortresses, and drawbridges, and balconies, and men in quaint armour. But who, for the sake of Durer's and Memling's beautiful types, and noble heads, and muscular figures, would accept the record as historical? I venture to apply this argument to the preposterous harps played by men, almost as preposterously clad, on the walls of the Egyptian buildings. I will go to the hazardous length of disbelieving in the small lyres handled so gracefully by the undraped figures who deck the Etruscan vases. I do not conceive that the ancients sat in windy porticos, unclad, and preluding on tortoise-shells having only a few strings; therefore, I question the authority of the musical records left in the tombs and temples of the Nile. And I am bolder

than I might otherwise have been to express incredulity, since I have seen that such fancies have been perpetuated in our own day as symbolical myths ;—and by no artist more deservedly distinguished than my valued and admired friend, Mr. Leighton, in his picture of “Orpheus”. The very thing which gives to imaginative art so much of its poetry, at the expense of its matter-of-fact evidence, is its idealisation of literal truth. I know that by what I say I make myself liable to be charged with cynicism and heresy ; but it is better to bear the blame, than to withhold sincere and deliberate conviction on a subject of some importance.

The difficulty of arriving at anything approaching a clear knowledge of what national music really is, will be found by the diligent student far greater than he may have expected at the outset of his researches. Judging from modern experience, notation, which is comparatively a modern art, cannot be accepted with too great caution. We have seen in our own times a press error, now distinctly proved as such, in Beethoven’s C-minor *Symphony*, wrangled for and defended as a stroke of genius by the fanatical admirers of a great master. And, if a poet can unconsciously allow his poem to go forth to the world thus debased by an excrescence, how are we to trust the correctness of the larger number of collectors from whom our knowledge of national music has been principally derived ?—many of them amateurs, little used to the exercise of those hard, uncompromising faculties which go to the substantiation of evidence ; many of them ladies not much in the habit of notation, having more imagination than judicial accuracy, and too willing to forget that, among singers and players not scientifically cultivated, vagaries and changes of the moment born, or referable to the weakness or courage of the executant—are of constant and perplexing recurrence.

Then, by the simple variation of *tempo*, implying some changes in accentuation, a melody can be so entirely transformed as to lose its original character. Many a gentlewoman has sung Scottish songs all her life, and has not adverted to the fact that the battle-tune, “Scots wha hae”, and the pathetic death-bed song, “The Land of the leal”, are identical, save in the manner of performance and the words with which they are mated. I have been present when, for a wager, an impertinent young person played the delicious pastoral melody from the *Messiah*, “He shall feed his flock”, as the tune to “La Poule”, the third figure in the first set of quadrilles which was imported from France. The irreverent proceeding passed without detection, and yet there was hardly one in ten of the dancers who would not have scouted the idea of unacquaintance with Handel’s sacred Oratorio. The extent to which the composers have availed themselves of this notorious fact—whether consciously or unconsciously matters little—could hardly be overstated.

Further intercourse, and with it the suggestions of cultivated and civilised travellers, can hardly fail, more or less, to tell upon even the most uninformed and uninstructed ears, and to present itself in the form of unconscious repetition, if not plagiarism. When the band of the Pasha of Egypt exhibited itself at the International Exhibition in

London, it was curious to detect how many phrases and fragments from the most common-place and modern French and English tunes were to be heard, with barbarous condiments (if the figure may be allowed) sufficient to deceive all save those listening for a purpose, and with some powers of recollection and comparison. So, again, in a very large collection of negro tunes which I examined some years ago, I was struck by phrases of such known melodies as "The Blue Bells of Scotland" and "Cherry Ripe", recurring so clearly, as to render the theory of coincidences visionary and strained beyond the bounds of reasonable faith. The imitative powers of the negro, I believe, are owned to be very great; and, if the voice of the planter's wife singing could be heard by the servants in the house or listening on the verandah, what so natural as that the melody should be somehow represented and transmitted from mouth to mouth, from pipe to pipe—transmitted with a difference?

At the very moment when I was writing this paragraph, my pen was stopped in obedience to the noisy proceedings of a troop of those minstrels so dear to Professor Babbage; a German brass band—not worse than such blatant orchestras usually are. One of the tunes, which at once chafed me and compelled me to listen, was for a moment strange, yet not absolutely unknown. I had to think twice before I became aware that it was a free arrangement of Meyerbeer's Coronation March in *Le Prophète*, containing one of the most explicitly defined melodies and rhythms that could be found in the library of music, ancient or modern. The amount of curious novelty and distortion caused by the audacious and illicit proceeding would have driven the composer—that most sensitive and punctilious of men when his own music was in question—into a frenzy of irritation and indigestion.

If what I have said has any root in truth or any thread of sequence, it will prepare you for the statement of my impression, that genuine, fresh, original national music exists in much smaller quantity than has been heretofore believed; and that its character has been the most marked wherever intercourse has been the most sparing and restricted.

I could devote a discourse to this one subject alone, which, I think, has never been sufficiently explored and wrought out; but can here merely offer my strong and fixed conviction of its very great importance, and recommend it earnestly to the study of every one desiring to examine the origin of cultivated music in its national sources.

Service, as distinct from sacred music, comes within the sphere of this discourse—the first belonging to a direct devotional obedience; the second illustrating the moods of holy meditation—even as a Hymn to be presented as part of a rite is essentially set apart from an epic, such as Milton's *Paradise Lost*; even as a Mass, with its priests at the altar and its scenic decorations, differs in its incitements and the impressions it produces from such sublime poems as Handel's *Messiah* and *Israel*.

The distinction betwixt what is mystical and congregational, betwixt what is represented and what is partaken of in sacred and service music, cannot be too clearly borne in mind, let the religious be-

lief be what it may. The chorus in the orchestra of a Roman Catholic church and the hymn of pilgrims as they wend their way across the Appennines (so picturesquely imitated by M. Berlioz) or cluster in Danube boats which are to convey them to the superb palace monasteries of Austria, have characters and functions entirely different in their qualities. I confess that even such a highly wrought and scenic exhibition, as one finds prepared in the cathedral at Cologne, or in St. Stephen's at Vienna—that dark church, where the candles and the films and clouds of incense before the silver altar make up a picture at once so gorgeous and dreamy—is to me less directly moving than the simpler music, whether unisonal or in parts, which I have heard in Lutheran and Calvinistic churches, those in Holland being especially remembered,—so hearty without vulgarity; or that coarse exaggeration which did—but does no longer—offend in the congregational psalmody of our own dissenting chapels. I have a particular recollection of a Sunday morning's service in the great and lofty church at Delft, the gorgeously decorated organ of which is almost an edifice in itself. The concord and consent of the singers' voices was like “the sound of many waters”, giving an impression of heartiness in prayer and praise never to be forgotten.

How this Protestant element of national worship could be turned to account in formal and scientific musical works may be seen in the oratorios and services of Sebastian Bach. In these, whenever a psalm tune, or *Corale* (as it is now foolishly fashionable to call a religious melody), occurred, the congregation was expected, and accustomed, to swell the strain, and hence—to digress for one moment—has resulted a loss of effect when these noble works have been presented in this country as sacred concert music—such support and filling up being, of course, out of the question under changed circumstances;—so that the consequence is a weariness and disappointment not to be felt in Handel's mighty oratorios, exclusively calculated for orchestra and chorus, in which the audience take the part of sympathy only, not of participation.

Among what is presumed to be the most ancient service music in existence is that of the Synagogue; but, so far as I have been able to examine it or to form any conjecture, the result is one of confusion and inconsistency. Many of the Hebrew chants are in the most irregular form of recitative, getting little beyond the wildest of wild cries, which, I have ventured to think, owe their existence to accident.

No doubt, the earliest specimens on record—due caution being repeated against any implicit trust in chronology as regards music—are these chants. When King David danced before the Ark, it is hard to conceive in what measures he could have moved so as to keep time to such strains of doleful wailing, as these sequences of sound must appear to modern ears. The primitive chant is merely an instinctive device to give vocal declamation variety and animation in delivering the spoken prayer or message, and rest to the voice of the priest as well as to the ears of the people. There is, possibly, no exercise of human ingenuity so difficult as the maintenance of a monotone. Extempore preachers, who labour under the extreme difficulty

of incomplete preparation, and must think of matter rather than manner, are apt to sing.

Those who are interested to follow the subject further cannot do better than examine the very interesting collection made by Mr. Aguilar and the Rev. Rabbi de Sola of the tunes of the Spanish and Portuguese Hebrews. But, in the midst of these wandering airs, which can only leave the most vague impressions possible, we are confronted by specimens astounding in their symmetry and the absence of that crudity which is largely distinctive of early music. Here, to illustrate the latter, is a Hebrew chant, which, I presume, could not have been accompanied by "trumpets also, and shawms", so irregular is it in form. And yet, from the very same collection, is derived a hymn, reputed to be the song of triumph on the passage of the Red Sea by the chosen people. You will at once perceive that it bears no trace of antiquity in interval or irregularity of rhythm.

So noble a tune as this—one so complete in its conformity with every modern requisition and discovery in the matter of melody—calls on a stretch of faith to which I confess myself unequal. It is hardly overpassed in musical effect by that noblest of strains of sacred triumph in a miracle—I mean the song of Miriam, with chorus, that closes Handel's *Israel*, "Sing ye unto the Lord for he hath triumphed gloriously."

To return. I find a trace of this noble melody in the "Song of the Three Magi", which is in Herr Engel's collection (p. 279), and which is still popular, he assures us, at Epiphany in certain parts of Germany.

The tunes of association have a large and distinct place in national music; but this, again, has its restrictions and exemptions. For instance, neither France nor Italy have anything to show analogous to the guild and student songs of Germany. The Madrigal belongs to the south, though it early took a firm root in this land of ours. But the Madrigal is a richly elaborate composition, fitted for the Pampineas and Fiordelisas whom Boccaccio assembled in his *Decameron* garden, rather than such a piece of artless and spontaneous song as one finds put forth by the German guilds, whether the same be of artificers, or of students, or of soldiers. The heartiness of these—be their composition or their execution referred to—has no peer in music. It would be hard, even in the Tarantella of burning Southern Italy, to find a more vivid and explicit expression of nationality in music. The German men have not pleasing voices, so much as strenuous and strong ones;—and thus, as trained chorus singers, they cannot compare with those of our own Northern England, such as are to be heard in all their splendour at the provincial festivals, such as used to be imported to London in coach-loads, for the use of Ancient Concerts and Lent oratorios held in theatres, long before railways were thought of, long before such admirable institutions as the Sacred Harmonic Society and other choral societies adorned the metropolis. But the German songs are, in their force and simplicity and the cordiality of their execution, resistless. Some are of Swabian and Styrian origin; these mostly partaking of the nature of the dance, in triple

measure. Some are the settings of spirit-stirring lyrics by such poets as Körner, Schiller, and Goethe,—by composers of no less mark than Beethoven—(best of all) Weber,—and Mendelssohn. I wish I had a *verein* at my command, such as I have heard in the pretty wood of Schwanheim, near Frankfort, to offer you a specimen ; though it is true that the concord of voices might be rather too forcibly disturbing in this our locality. And heard with translated words the effect is starved and strange. In years past, I bestowed some labour in trying to render equivalents such as could be sung without alteration to the rhythm of the music, and with reference to the preservation of the ideas. The result was generally unsatisfactory. “To each his own.” I can never bear to hear Handel’s sacred oratorios, written on our glorious Biblical text, or his *Sampson*, or his *Acis*, sung in German. As little can I admire a minuet danced, by what some old Frenchman described as “English awkwardness, on two left legs.” As little can I endure an Italian perversion of *Fidelio* or *Der Freischütz*. Our home glees are pleasant, when they are not too somnolently warbled without reference to tone, not to tune ; but, in no respect do they offer an equivalent for the strong, stirring, muscular songs of the German “table books.”

It must not be lost sight of that Music in no respect has kept pace or proportion with art and manufacture. Look at the exquisite tissues of India, look at the perfect colours and pellucid texture of Chinese porcelain, look at the forms of the bronze vases from Japan, in harmony and elegance rivalling the best specimens from the Etruscan tombs—then listen to the hideous cacophony accepted by the orientals for sweet sounds, and the disproportion in all its amazing magnitude must suggest itself, to the entire confusion of all those pleasing theorists who have legislated on the plea of the connection of the arts. It is idle to say that Music is a thing of mere fashion and convention. If the eye can comprehend the gorgeous and harmonious mixtures of ancient colour, the beauty of ancient form, to which attention has been drawn, the ear is surely as sensible to the sweetness of a chain of harmonious tones and a monotonous screech of hideous voices. In districts where civilisation has worn the simplest forms, melody has developed itself of a wild purity and sweetness exceeded at no later period of sophisticated manners, or intellectual culture, or luxurious appliances. The primitive melodies of the far North, and of our own three kingdoms, many of which appear to be of great antiquity, will last as long as music shall last ; whereas the ear turns away with repugnance from most of the music which delights the Orientals. Where they show any sense for Music, it is confined to rhythm, and seldom includes beauty of sound or symmetry of form.

One or two exceptions, however, present themselves, and among these is the stately Chinese hymn, in honour of the ancestors, which Herr Engel assures us was, or is, in high request on occasions and anniversaries when the dead are remembered. I presume it to have been unisonal, since, from its being in the pentatonic scale, it would be difficult to imagine it harmonised. There are three strophes, divided by an interval of service and rest.

The most beautiful and symmetrical national airs that we possess are those that come from the North. Norway, Denmark, Sweden, but, above all, Russia, have yielded some admirable tunes to the world. That there is a rude and original taste for art among these people, till within a comparatively recent period little leavened by intercourse with travellers from the South, may be seen in the curious Norwegian cups festooned with coins; in the Russian attempts at *niello* in plates and mosaics, at least as suggestive of genius as the Italian pictures by Cimabue and Margharitone, in which, nevertheless, the art of painting was revived among a people highly civilised and rich in monuments of a glorious and noble past. How far these may, or may not, be of Byzantine origin, may be left to persons more deeply versed in those branches of art than myself to decide. But, at all events, seeing that no Byzantine melodies, as we understand the word, have come down to us, whereas we have a host of excellent tunes to be sung and to be danced from regions to which travellers rarely penetrated, and, moreover, owning no resemblance whatever to the national airs of other countries, it may be deduced, I think, that the Northerners take a high, I may say the very highest, place among the peoples of the earth to whom melody was known long ago. With little exception, it may be noted that these Northern airs are in minor keys—it might be fancied an expression of, rather than a protest against, the gloom of the climate and scenery—were not the same a characteristic largely marking early national music be the zone torrid or arctic. This might be thought at complete variance with brisk dancing, if not to the slow voluptuous attitudinising in which the Orientals delight.

Among the most remarkable specimens of national music that we possess, are the tunes of Servia and of Wallachia—of the countries where the East and West may be said to have met, and, by meeting, the one to have influenced the other without any annulling of individuality. There is a curious gipsy *twang* about them, which may at once imply cause and effect: an imperfect tradition carried hither and thither on imperfect instruments, but with, also, a tone, and a twirl, and a thrill in them, that have possibly fortuitously got together and, by their union, produced a type and a style of art which is neither Eastern nor Western.

There is one form of national music not to be overlooked, by its peculiar character brought more intimately within the verge of mechanical science than any other which could be possibly named—the music from “high places”—to use the scriptural phrase—from spires and steeples: the music of chimes and bells. The exceeding picturesqueness of this must have struck on the ear and heart of many a traveller, who, nevertheless, may have not cared, or been able, to analyse his dream or his impression. The *carillons* of the Low Countries (or the *cornichons*, as I once heard them called by an English travelling gentlewoman, who published a book), have a poetry and a humour of their own, not to be replaced, or equalled, even by the shepherd’s horn on the mountains, or (what I am barbarous enough to enjoy when it is set in its proper framework) the wild, semi-savage music of the bag-pipe, coming across some heathery slope, and out-

rivalling, perhaps methodising, the cries of wild birds—always, as Collins says, “by distance made more sweet.”

Chimes and bells seem to me eminently to be the produce of flat districts, originally calculated, besides notation of the hour, to convey caution and alarm, in the event of any trouble, to willing helpers, were the same inundations, or invasion, or fire. I cannot but recal, while on the subject, that pathetic and spirited ballad-poem by Miss Ingelow, “The High Tide in Lincolnshire”, where the summons from the belfry is so picturesquely employed; and the fantastic lyric by Victor Hugo, “Lines written on a Flemish Window”, in which there is a most charming echo of the music from the church towers. Chimes and bells, then, are rather materials intended for mechanical uses than for the artist; but that these materials have been turned into the service of music, the history of bell-ringing and clock-making will sufficiently show. Should any one care to follow this matter further, I venture to refer him to a small but interesting volume by the Rev. Mr. Lukis, published by Mr. Parker in 1857.

Apart from all associations connected with a call to worship, such as strike the ear pleasantly and impressively in the stillness of a calm English Sabbath morning, the management of a chime of bells was an art and a science of variety—by the old phrase called permutation—possibly now dying out in England, but formerly in great request. I have no doubt that, by the music of the belfries, so limited and yet so changing, many effects have been suggested to musical composers. One frank and charming specimen of these is to be found in the chorus, “Welcome, mighty kings”, in the *Saul* of Handel. On that greatest of musical painters nothing was lost—whether it was the chirping of birds, so exquisitely presented in his *Acis and Galatea*; or the giant stride of Polyphemus in the same serenata; or the plagues and prodigies of *Israel*, describing the fire mingled with hail, the darkness, and the cleaving of the Red Sea.—That Handel was obviously sensitive to the sentiment of this out-of-door music is again to be traced in his chime of the “merry bells” from Milton’s *L’Allegro*.

It was part of the duties of organists in the Low Countries in days gone by to perform on the chimes—*carillons*—which, besides their mechanical use as marking the time from the belfry, were connected with a rude key-board, enabling the player to execute inventive and not mechanical music. That most intelligent of English artistic travellers, on whom nothing was lost—I mean Dr. Burney—gives among his other recollections a noticeable account of the performance of a blind Dutch organist at Amsterdam, who had to drive down every key that was to sound by a force of fist which would have made him formidable as a pugilist. The physical fatigue of this exercise must have been tremendous, and the whole display had in it something gross and barbaric, the practice of which was doomed to die out. I am unable to state whether there are still *carillonneurs* in the country of Paul Potter and Rembrandt and Van der Helst. The church organs there, excellent for their grandeur of full sound, in their exceeding difficulty of touch, offer hardships to be overcome with which the most muscular of musical muscular Christians (to use Mr. Kingsley’s phrase) need not disdain to grapple.

It may be observed that the sense of musical rhythm seems as distinctly distributed among different nations as varieties of physiognomy. To give an instance ;—the Peninsular melodies are only characteristic when they are in triple time, such as the Fandango, the Bolero, the Zapateado, the Tirana ; the airs in common time being essentially mawkish and savourless, owing such individuality as they have to the sleepy voluptuous delivery of the executant. On the other hand, the humour of France lies directly in the direction of squared music, towards what is piquant as distinct from what is undulating. There is nothing to compare with a French Bourrée, which has given the name to a particular class of measure, or to a Galop, as Auber and Adam have used the measure ; but, as players and composers of waltzes, our neighbours are entirely distanced, when at their best, by the admirable orchestras and writers of Southern Germany. I do not know a waltz of French origin which can match with those of Strauss, and Lanner, and Labitsky, unless it be the excellent dance in the fair scene of M. Gounod's *Faust* ; and this may be, perhaps, because M. Gounod is the least French in his style of any of the popular composers of his country whom I could name. That climate, race, and nationality in these points bear with an influence on our art which is almost ineradicable I have long seen reason to think. How else is the apparently capricious distribution of voices to be accounted for ?—how, that high *soprani* and high tenors are so common in France, and, curiously deep basses ?—whereas, there is not a *contralto* of the country whom I can remember with the slightest pleasure. And, indeed, the voice was generally avoided by composers for France until that exceptional, and almost unique, woman of genius, seconded by culture, Madame Pauline Viardot, appeared, to show the world what can be done by the highest inspiration of art, independent of natural graces and gifts. For her sake, Meyerbeer threw down the Chinese wall of limitation and prejudice, and gave scope, in *Le Prophète*, to her extraordinary accomplishments and powers of achievement. How, some years later, she yet more distinctly justified and expressed these by her magnificent revival of Glück's *Orfeo*, I doubt not that some of my hearers, conversant with Paris, must remember. I cannot even recur to it without that strong emotion which is at once so rare and so precious. The Medici statues, by Michael Angelo, in the chapel at Florence ; Titian's "St. Peter Martyr" at Venice, now destroyed—are not more vividly before me, as having left an indelible print on the mind, than Pasta's *Medea*, or the curse of Lablache in *Otello*, or the two splendid impersonations by Malibran's sister ; the *presence* of which (I may say so without grimace) has beguiled me for a moment beyond the strict limits of my discourse.

In treating the question of national music here, I may remark, without wandering too far out of my record, on a phenomenon which is of universal recurrence—the demarcations not merely of race, but of sex too, in the art, be its stages of culture or civilisation ever so primitive, ever so mature. The absence of musical inventive genius in the fairer half of creation is most curiously inexplicable, and

another signal illustration of the contradictions and inconsistencies which mark Music in all its conditions, in all its stages, beyond any other art. No historical or critical observer would be in his senses were he not cordially to admit the power, and the persistence, and the originality, which women have shown in pursuits of far greater difficulty. Illustrations rise up by the hundred. It has been said, and never contradicted, that the spire of Strasburg Cathedral was devised by Sabina, the daughter of the architect Erwin von Steinbach. A similar legend, by the way, belongs to the daring caprice of the spire of our own Dunstan's-in-the-East, which is ascribed to Wren's daughter. There have been female sculptors, such as Properzia Rossi, the Italian, who could hold their own, even in the great age of the art ; and, in our own day, the gentle and gracious Princess Marie of Orleans, who imagined, and for the most part executed, her statue of Joan of Arc, one of the noblest efforts of modern sculpture. It is superfluous almost to cite so brilliant an example of power, in a branch of painting which might have been fancied inaccessible to female audacity, as Mademoiselle Rosa Bonheur. And to change, without losing sight of, the theme of sex, I may name the recognised services done to Science by the admirable and venerable Mrs. Somerville. Setting aside such stately dames as Mdlle. de Scuderi and our own astounding Margaret, Duchess of Newcastle, we reach a gentle poetess, the Countess of Winchelsea (as Wordsworth finely pointed out) one of the first minute observers of Nature, who helped to found the school in which such artists as himself, and Crabbe, and, to-day, a hundred more—let me bow in passing to our laureate—have proved themselves so exquisitely proficient. Then Clara Reeve and Anne Radcliffe may be said to have given the impetus to supernatural romance in England, since Horace Walpole's *Castle of Otranto* was, at best, a literary luxury. Harriet Lee, a schoolmistress at Bath, whose *Canterbury Tales*, in their *Krunitzner*, presented the world with one real invention, which Byron did not disdain to work out for tragic drama, as his *Werner* attests. Miss Edgeworth, suggested the national tale to our modern Shakespeare, Walter Scott (according to the author's own confession). And I must further name with emphasis, and, I hope, discretion, one of the most delicate, complete, and original geniuses of any time. I mean Miss Austen ; the canonisation of whose domestic novels is one of the most marking and encouraging facts of England's justice in literary taste. There was a gentle, quiet Scottish lady, born in a manse, Joanna Baillie, who yet could write tragedies which Mrs. Siddons and John Kemble did not disdain to adopt ;—and a still greater female dramatist, Mary Russell Mitford, whose four successful plays will bear comparison with any contemporary productions. Then a word is due to a lyrist, who founded a school both here and in America, Felicia Hemans. Yet all the above said, done, and conceded, what have women—to disdain the footman's designation of “the ladies”—done in musical creation ?—Virtually nothing.

As dramatic interpreters in the hampered and conventional world of acted Drama, sung Opera, and declaimed Oratorio, they have dis-

tanced the best of the best men. We have nothing "to score" on our side, against such gifted persons as, among actors, Siddons, Jordan, Mars, the incomparable, gracious, and versatile Rachel; among singers, as Mara, Catalani, Sontag, Pasta, Grisi, Lind, and last, not least—nay, rather greatest, inasmuch as her genius enabled her to bring a rebellious nature into subjection—the yet greater sister of the great Malibran, Madame Pauline Viardot.

And yet women, so unsurpassable as interpreters, have been habitually weak as composers. The Electress of Saxony wrote operas, which she inflicted on Burney; Madame de Montgeroult, Concertos; Madame Fanny Hensel (Mendelssohn's sister, and, it may be said, in some respects, his other self), music in the most ambitious and severe forms. I could name scores besides; some of whom are, happily for us, quickening and adorning our society at the time being; but I cannot, after much comparison and retrospect, recall one single exception such as proves a rule. There have been female violinists, female pianists, female organists even—I will name one of these whom some of my hearers may recollect, Miss Sterling—who have justly gained distinction without any Salique concessions made by the haughtiness of man; but, as originating new thoughts, new forms, new phrases of melody, new facts of harmony, I cannot recollect a solitary female composer. The more I have reflected on this fact, the more strange, yet the more distinct, has it risen up before me.

It requires some nerve to say this, with the "emancipation movement" impending. That it may yield us anything equivalent to a Bach, a Handel, a Beethoven, a Mozart, a Weber, a Rossini, is what every loyal lover of art, and despiser of old cant sarcasms and class demarcations, will join me in desiring.

It may doubtless seem to some among my hearers a strange, perhaps a heartless, neglect of matters belonging to our own hearths and homes, that I have not devoted space to a branch of my subject so rich and suggestive as the music of our own country, including Wales, Ireland, and Scotland. I will remind them of a chapter in the *Natural History of Iceland*, by Olaus Magnus, at which every one has laughed. The chapter is "Of Snakes in Iceland", and runs thus: "Snakes in Iceland. There be none." Precisely the converse is to be said of the national music of these islands. It is a subject not to be packed away into a solitary paragraph by reason of its exceeding diversity and richness of material—as the collections of Mr. William Chappell, Mr. Graham, Mr. Dauney's republication of the Skene Manuscript, and (perhaps, best and most curious of all) Mr. Bunting's work, attest. And it is too well known to many of you, in its particulars and details, for that slight manner of treating it which presents an outline of things further remote,—to be admissible—I would not insult you, or stultify myself, by bringing in a few common-places at the close of a discourse, which, I am aware, may have been found too long. And I think you may see fair reason for my plea. If, however, what I have collected and just presented seem to you to have any special interest or value in reference to the objects of this society, and you

care, at some future period, to allow me a hearing, I will attempt some notice and remarks on the national music of our own country.

The paper was illustrated by Mr. Dannreuther on the pianoforte.

The CHAIRMAN proposed, and Mr. DENDY seconded, a vote of thanks to Mr. Chorley, which was put and carried by acclamation.

Mr. CHORLEY returned thanks, and the meeting separated.

MAY 31ST, 1870.

DR. R. S. CHARNOCK, V.P., IN THE CHAIR.

THE minutes were read and confirmed.

George Thorne Ricketts, Esq., H. M. Consul Manilla, was elected a Fellow.

The presents were announced as follows, and thanks were voted to the donors.

FOR THE LIBRARY.

From the EDITOR.—Nature (to date).

From the SOCIETY.—Journal of the Royal Geographical Society, vol. xxxix.

From Dr. B. SEEMANN.—Seven Photographs of Antiquities of Yucatan.

From E. T. STEVENS, Esq.—Flint Chips: a Guide to Prehistoric Archæology.

From Dr. A. WEISBACH.—Die Schädelform der Rumänen.

From the INSTITUTION.—Journal of the Royal Institution of Cornwall, No. 9, 1870.

From the INSTITUTE.—The Canadian Journal, vol. xii, No. 5.

From the AUTHOR.—A Handbook of Phrenology. By Dr. C. Donovan.

From the AUTHORS.—Zeitschrift für Ethnologie, 1870, Heft ii. A. Bastian and R. Hartmann.

From Dr. E. T. R. TENISON.—The British Medical Journal, May 1869.

From the AUTHOR.—Patronymica Cornu-Britannica. By Dr. R. S. Charnock.

From the SOCIETY.—Proceedings of the Society of Antiquaries, London, vol. iv, No. 7.

From the SOCIETY.—Proceedings of the Asiatic Society of Bengal, No. 3, 1870. Journal ditto, Part ii, No. 1.

From N. TRÜBNER, Esq.—The Lifted and Subsided Rocks of America. By G. Catlin, Esq.

FOR THE MUSEUM.

From Dr. DELGADO JUGO.—Two Basque skulls.

From the Rev. J. G. WOOD.—Two Tonga arrows; one cross-bow bolt, China; one spur, Patagonia, one spur, Niger; bolas, Patagonia; girth. Patagonia; lasso, Mexico; a robe, New Zealand.

A communication was read from Dr. W. M. Skues relative to a Hebrew Roll of the Levitical Law which he had presented to the Society's library.

A paper by Dr. SHORTT was read on *The Armenians of Southern India*. (The paper appears in the *Journal of Anthropology* for October.)

[*Abstract.*]

Early in the sixteenth century a few Armenians found their way into Southern India with the countenance and support of the Honourable East India Company, and under a contract with the company equal privileges with British subjects were conceded to the Armenians. The company further extended favours to them when they reached, in any town, the number of forty, by the provision of a place of worship and by annual grants of money. For a long time after their arrival in India they avoided mingling with other people, but latterly that rule has been broken through and alliances in marriage with Europeans are not unfrequent. The Armenians have diminished in numbers; and, it is said, are daily decreasing in influence. The chief causes of their approaching extinction in India appear to be the vice of intemperance, the taint of disease, and the contact with the Europeans, more especially the English. The physical and moral characteristics were described; in the former it was stated that the Armenians are strongly allied to the Jewish race, from which they claim descent.

The CHAIRMAN, referring to the uniformity of Armenian character, etc., wherever met with, said, according to the author of the paper, the priests entered the married state; the people sometimes intermarried with the English; they were addicted to intemperance; and, with regard to stature, that they were short and stout. Now, the Armenians of Transylvania were generally somewhat stout, and rather above the middle size; they were temperate; they intermarried with the Magyars, but not with the Saxons; and the priests were permitted to marry, but did not do so. According to Dr. Shortt, the first Armenians found their way into Southern India early in the sixteenth century; and the Armenians, like the Jews, are scattered over the earth. But there was this distinction, that the Armenian kingdom was broken up long before the sixteenth century, and no doubt most of the Armenians of India were colonists; indeed, the Armenians were generally very good colonists. According to Dr. Shortt, they profess to be descendants of Haïk, grandson of Japhet; and after Aram, a descendant of Japhet, they called their country Armenia, and themselves Armenians. But Genesis did not mention Haïk as a grandson of Japhet, and Aram was a descendant of Shem, and not of Japhet. The Armenians also derived their name, and that of their country, from Togarmah, grandson of Japhet; another grandson of Japhet was named Ashkenaz, and the latter was a geographical name in Armenia. The best etymology of the name Armenia was from *Har-Minna*, "the mountainous part of Minni"; the Minni of Jeremiah (a district placed between Ararat and Ashkenaz); the *Mivvas* of Nicholas of Damascus.

The following paper by JOHN STIRLING, Esq., M.A., F.A.S.L., was read, on *The Races of Morocco*.

The inhabitants of that portion of Barbary known as Morocco are usually called Moors. But this name, of course, is no more descrip-

tive of race than the term *English* is, when used to denote, as it often is, the natives of Great Britain and Ireland, or even the "rock scorpions" of Gibraltar.

The races of Morocco may be arranged under the following names: Berbers, Al Ryf (the Ryf-men), Arabs, Bohāra troops, and other negroes, or half-breeds, and the Jews. In books I have sometimes seen the word "Kabyles" employed as if to designate some North African race; but, as far as I am aware, the term, as used by the Moors, refers in a general way to villagers or country people employed in agriculture.

Of the history of the Berbers, there is probably less to be known than of that of the other races of Morocco. On the route to Fez, I have seen small walled towns built high up on the hills. These, I believe, are the dwelling-places of Berbers, and of Berber origin. But it is more easy to say what a Berber is not, than to define what he is. That he came from the East is most probable; but did he come from Canaan, and if so, is he a Gergesite, a Jebusite, or a Phœnician?

According to M. Deveau, the Berber is the original or oldest element of the North African village population. "The base," he says, "of the Kabyle population is of the Berber race, consequently of the Caucasian. The Berber race forms the nucleus of the population which inhabits the portion of Africa which extends from the northern (?) shore towards a zone as yet unexplored, perhaps reaching to the confines of Ethiopia" (*L'Institut*, sect. ii, 306, 1861).

Le Hon mentions that M. Desor, since his journey to the Sahara, has described numerous and important dolmens on the slopes of the Atlas; and it is suggested that the ancient Numidians and the actual Berbers may be the descendants of the mysterious people who erected the dolmens. Relics of the character here alluded to are not very common in the northern districts of Morocco; but I have myself seen at least one important specimen not above two days' journey from Tangier.

It is at least probable that people of Phœnician race mixed with the most ancient inhabitants of Morocco. On this point M. Texier remarks: "The Phœnicians built a fortified place in Numidia on the same site as that of the existing town of Tingis" (Tangier).

Pleyte, a recent and admirable Dutch historian, writing of the Berbers, referring to *Talmud Jeruschalmi, tract Schal.* c. 6, f. 35, says, that on the conquest of Canaan by Joshua, the Gergesites, "who believed in God," took to flight and made their escape into Africa.

Bearing somewhat on the Canaanitish origin of the Berbers we read (*Chron. Paschale*, ii, p. 96) of neighbouring populations, that the inhabitants of the Balearic Islands were descended from Canaanites, who fled before Joshua, and that the town of Cadiz in Spain was built by Jebusites and other Canaanite tribes.

The name Berber is probably derived from the Arabic word *berbera*, and if so, may mean a jumble of unintelligible cries—a not unnatural description for one barbarous people to give of another barbarous people's language which they did not understand. Al-Ryf (the Ryf-men) are a somewhat more tangible subject than the Berbers.

On landing about two years ago at Tangier, I began to remark, about the market-places, lightly-clad, sun-burnt figures, with heads shaved, all but one occipital corner, where a tuft of hair was allowed to develop into a long tress, which was worn either plaited or flowing luxuriantly and unconfined, like an animal's tail. "Who are these men?" I asked my interpreter. "Bery bad men, sir!—suppose you want to kill me—then you give one of these men a penny—one penny—and he will do it."

These wild relatives or descendants of the Ryf pirates of other days are the inhabitants of the northern spurs of the Atlas range which separate Morocco from Algeria; and, though they are nominally the subjects of the Sultan of Morocco, they never have been really subdued in their mountain fastnesses. They are very jealous of any violation of their territory, and for a stranger to attempt to pass through these mountain ranges is said to be certain death. Al-Ryf, however, are by no means confined to these inaccessible and inhospitable regions. The entire Tangier district is reckoned to be Ryf territory, and what little agriculture goes on is in the hands of al-Ryf. But this province is by no means one of the most fertile in Morocco. Many of these people are also shopkeepers in the towns, practise handicrafts, and occupy themselves in commercial pursuits. The present Basha of Tangier is a Ryfy (Ryf-man). Like all the fair people of Morocco, al-Ryf are a handsome and well-formed generation. When they are constantly exposed to the sun, their skin takes on a magnificent bronze colour; but those who follow indoor pursuits are of a delicate olive complexion.

During the famine-winter of 1867-8 there wandered about the streets of Tangier a small Ryf family of three orphans. The eldest was a girl just developing into womanhood, and possessing splendid dark eyes, rather well-proportioned features, and in other respects as much beauty as was consistent with constant exposure to the weather and a chronic experience of very short commons. The next member was a girl much younger, and the third a little boy about four years of age. The father of these children, I was told, had been killed by his brother, so that, being without a natural provider, they had wandered, in that cruel winter, to semi-European Tangier, where charity somewhat more abounds than in the less mixed Moorish population. The brother of tender years, when asked "what will you do to your uncle when you are big enough?" used to answer with infantine energy: "Kill him, kill him, kill him!" I mention this as an illustration of how early the sentiment of the "blood-feud" becomes a part of the young idea of these people.

As the traveller advances from the coast towards the great plains of the interior, he finds the character of the population change. The villages are no longer composed of mud or cane-built huts, but consist of groups of tents. This indicated the presence of the Arab race, who, like all invaders, have occupied the richest portions of the country. However, in the great fertile plains of Morocco there is room for a much larger population. According to the best information I have been able to obtain, the number of the inhabitants has very much de-

creased, and is still decreasing. I have met persons who deny that the entire population of Morocco can exceed five millions.

It would be needless to describe the Arab of Morocco, as I am not aware that he differs materially from his brother of the east. A somewhat remarkable race are the Bohāra troops. Their ancestors were a rebellious Negro tribe, living south of the Atlas; and being subdued by one of the Sultans, were afterwards formed into a body-guard, at present numbering two thousand men. Though they have since intermarried with Moorish women, they have not lost the Negro type of feature, nor much of that complexion which is "the shadowed livery of the burnished sun."

The Sultan himself, though Sheryf, that is to say, the descendant of the Prophet, is pretty nearly as dark as his Bohāra horse-guards; and this complexion is likely to show itself for some generations, as his Sheryfian Majesty's predilection for dark coloured wives is well known.

There are many Negroes in Morocco, both slaves and free men; and the intermarriage of the females with the fair Moors produces a mixed race. But the true Moor is a fair man; I have seen some individuals with blue eyes and light or red hair. The Jews form a not inconsiderable portion of the population of Moorish towns; and in Tangier, where these people are more numerous than elsewhere, they constitute, perhaps, one third of the native community: but in other places they perhaps do not form a tenth of the town population. An adequate account, however, of the character and real condition of the Jews of Morocco would require almost a separate paper.

Though all the native races, with the exception, of course, of the Jews, profess to believe in "God and his prophet Mohammed," yet the traditions of far older phases of religion are unquestionably still extant. Even the primeval Fetish still flourishes. There is on the beach at Tangier a large cylindrical stone, or rather rock, which daily, at low water, attracts the devout salutations of many Moorish women.

Mr. A. L. LEWIS said the paper raised a number of questions, some of which had a deeper interest for Britons than might be generally supposed. It was extremely probable that there might have been a Canaanitish influence in North Africa, and there were also various, though perhaps obscure indications of a residence in Africa of the progenitors of the Irish, who might have been influenced during such residence in such a manner as to receive and transmit to their present representatives some of those peculiarities which now puzzled anthropologists and politicians. The fact of megalithic monuments being found in North Africa showed, amongst other things, that a certain influence, perhaps of Phœnician origin, had been at work there, which had pervaded many other countries from India to Britain and Scandinavia, but these monuments were not as yet known to exist in that part of North Africa which lay nearest Egypt, which tended to show that the builders had come over from Sicily and worked towards Gibraltar.

The CHAIRMAN said the author of the paper derived the term

"Berber" from the Arabic word *berbera*, "a jumble of unintelligible cries." This reminded one of an etymology of Leo, quoted by Müller, that the name which the Germans gave to their neighbours the Celts, *Walk*, in old high German, *Vealh* in Anglo-Saxon, the modern *Welsh*, is supposed to be the same as the Sanskrit *mlechha*, "a person who talks indistinctly," a sort of etymology very well for babies. It would be absurd to suppose that the Welsh could have derived their name direct from the Sanskrit. But it might be as well to see whether a better etymology of the word Berber could not be found than that suggested in the paper. The Arabs also give the name of Berber to the Somāli, who inhabit the country between Abyssinia and Zanguebar, and to the Barābrā, the general name by which the peoples of Nubia are designated in Egypt. But these three peoples are different in race, language, and everything else. Burckhardt derives the name of the Barābrā from a wady or district of Upper Nubia, on the right bank of the Nile. The Hebrew word *bar* signifies "son," and *êber* or *êbr* "region on the other side"; so that *Bar-êber* or *Bar-êberon* might signify "the people on the other side", i.e., "the people beyond the boundary, or across the stream." Again, the Hebrew *bar* is a field, plain, country, and the Arabic *barr* is also a desert: so that a compound, *Bar-ber-berr*, or *Bar-berim*, might mean "people of the country or of the desert." Now this latter etymology (people of the desert) was supported by the fact that Barbary, before it was inhabited by the Arabs, was almost depopulated, and also because all the oases of the desert were formerly peopled by Berbers. But another etymology might still be found. Among other names for Barbary, in vulgar Arabic, were *Belād-êl-Moghârebah*, "the country of the West"; and *El-Moghreb*, "the West," *Berr-êl-Gharb*, and *El Gharb* respectively of the same meaning. Now, if the term *El-Gharb* was used to designate Barbary, might not this district also be called the *Berr*; and if so the inhabitants would be named *Bar-Berr*, "the people of the Berr." The term Kabylah meant "men who lived in tribes," from Arabic *kabâil*, a tribe, plural *kabyléh*; and Tawârik or Tuârik, is a plural formed from the Berber word *terkâ*, of the same meaning. Mr. Dendy was of opinion that the descendants of Cush peopled the North, and those of Ham the South, of Africa; but he admitted that this was a sweeping assertion; and he, Dr. CHARNOCK, agreed that it was such.

Sir DUNCAN GIBB, Bart., read the following paper: *On the Paucity of Aboriginal Monuments in Canada.*

I have oftentimes been struck by the remarkable scarcity of monuments of an aboriginal character when residing in Canada, contrasted with the neighbouring, more southern territory of the American Union and the nations of Central America. Being familiar with most of the archæological discoveries such as we know them in Canada or the immediately bordering lands, such as the pictured rocks of Lake Superior, and the great mounds of Ohio, and other states contiguous to Canada, it has occurred to me there must be some good reason why architectural monuments are either wholly absent in Canada, or so scarce that as yet we know of very few or almost none of them.

Humboldt, indeed, in his *Aspects of Nature*, published by Bohn, refers to a monument discovered in the prairies of Canada, about nine hundred French miles due west from Montreal. This would be either in the state of Wisconsin, to the west of Lake Michigan, or to the north or south of Lake Superior. I incline to think it the prairie land in the first named, but which was considered a part of Canada at the time the monument was discovered. Regarding this monument I shall have a word to say by-and-bye.

In discussing the subject of Aboriginal Monuments, I would exclude the small remains of the earlier inhabitants of Canada, such as flint arrow-heads, stone implements or weapons, fragments of pottery, etc., found now and then in various parts of the country. I would also exclude Indian burying-grounds, which are not uncommon in Canada, near Dundas, Ottawa, and other places, even with large, full-grown trees flourishing over them, because, although the inhabitants may have been ancient, they were not builders of stone. Likewise I would exclude the Ancient Mounds described by Mr. T. C. Wallbridge in the *Canad. Jour.* for September, 1860, occurring upon the shores of the Bay of Quinté. These are similar to the barrows or tumuli described by American antiquarians, and extend along the bay shore for eight miles, in which distance as many as a hundred of them may be counted. It is conjectured, also with good reason, that they may extend to the shores of the upper lakes, and thence to the most remote parts of the Continent. There is this curious fact, however, which allies them to ancient monuments, and it is that for the most part they are constructed of masses of broken gneiss brought from a distance, and covered with a layer of earth of a certain thickness. They are invariably sepulchral in character, for they contain human remains, and objects of curiosity and art, not unlike our English barrows, and such as extend over a very wide range of the North American continent, especially in the state of Ohio and valley of the Mississippi.

The present communication refers to monuments that had been erected either as dwellings, or temples of a religious character, as met with in Chiapas, Yucatan, Mexico, Peru, and other places.

There seem to me to be *two* good and sufficient reasons why such remains have not been found in Canada, and one of them will apply to northern nations in other parts of the world. It is this, that the extreme cold and rigour of such a climate as exists in Canada, with its six months of winter, the ground for the most part of the time, indeed the whole of it, covered with snow; and although the change is very rapid in the spring of the year from winter to summer, the summer being not inferior to that of the tropics, is nevertheless unfavourable for the long conservation of architectural monuments or remains of any kind, unless carefully looked after as in modern times. The continuous frost of winter will in time destroy everything of a monumental character, built up of separate stones, no matter almost what their size may be, unless I except the Canadian mounds of stone, covered with earth. We have no evidence, that I know of, of the existence of truly aboriginal temples or monuments in any part of Northern Europe, although perhaps there may be some in Asia, but

certainly none exist in America, although there are still large districts of country that have not as yet been thoroughly explored. In the southern frontier mountains of Siberia, and in the steppes of the middle regions of the Lena, it has been asserted that frequent memorials are found there of ancient grandeur, magnificence, and culture, of which some are presumed to be of an antiquity demonstrably of above a thousand years. The crumbling ruins of some ancient town are now and then found, and Tartarian tombs in Siberia, containing objects of interest, antiquity, and art. But I doubt whether such things are found very far north in Siberia, although I am free to admit that where they are found would be about the same latitude as many parts of Canada. The same also may be said of some of the wonderful Lamaseries and other temples, found in the elevated and northern parts of Asia, which have been described by various travellers; but they are comparatively modern, and cannot possess any claim to rank as aboriginal, although it is very possible that some may possess a tolerably great antiquity. Climate, then, is the great drawback to the preservation of aboriginal monuments, and I very much doubt, from my intimate knowledge of that of Canada, whether, even supposing they had been built, their remains would have held long together from the destructive action of some centuries of frost and snow in the long winter season.

Secondly, the people who built the great American mounds, many of which are close to Canada, especially in the neighbouring state of Ohio, and who no doubt peopled the country north as well as south of the great American lakes, and erected the Canadian mounds as well, were, I believe most firmly, the descendants of those Tartar tribes who crossed into America by Behrings Straits, and who occupied the greater portion of the North American Continent, now represented by the existing races of Indians. They were altogether a different race of people to those who built the magnificent temples of Central and South America. I state this advisedly, notwithstanding the interesting essay of Mr. Charles Whittlesey, on the *Ancient Miners of Lake Superior*, wherein he has endeavoured to show the connexion of the Aztecs, or Ancient Mexicans, with the ancient mining operations on Lake Superior (*Can. Jour.*, vol. i, 4to, 106). Supposing even it were established that the Aztecs arrived in Central America from a northern region one thousand two hundred years ago, *i.e.*, about A.D. 600, I still think that the *climate* would be the chief reason for no stone buildings being erected, or, if erected, soon hopelessly destroyed. Whether the Aztecs are the mound builders or not, or the ancient miners of Lake Superior, does not signify in the general argument, for we find no monuments of stone in Canada.

If anything points more to a kinship between various nations, it is their monuments, and it is curious to reflect that the Mexican and Central American monuments exist in a climate that is not unlike that of Egypt, and one in which the rule is preservation like that of Egypt, instead of disintegrative destruction, as would occur in a cold climate like that of Canada. Who can tell whether they, the ancient Egyptians and the Mexicans, may not be the descendants of one and

the same people. The modern representatives of the Indians, as we know them in North America, certainly manifest no architectural genius, inherited from their forefathers. The same may be said of the present Central American Indians ; but among the latter civilisation would seem to have departed from among them ; whilst among those of more northern parts it may never have existed, or if it did, the only remains left behind to show it are the great American mounds in Ohio, and other neighbouring states, and those in Canada.

The climate varies somewhat in the eastern and western parts of Canada, being milder in the latter and more favourable for the preservation of any monuments. Yet we find none of them unless the mounds, such as exist in the prairies of Ohio, almost alongside of Canada. I thought at first that the great chain of lakes formed a sort of dividing line between the mound builders and the then existing more northern Indians, but that could not be so, as mounds have been found north of Lake Ontario. The same line of reasoning respecting climate will apply to New York State, and all of the territory to the east, including Maine, New Hampshire, New Brunswick, Nova Scotia, and Newfoundland. The only aboriginal remains are chiefly rock sculptures and markings, as have been described from time to time by various writers, occurring chiefly in the state of New York. Of these Canada can boast of none in caverns, such as have been found in Scotland, although no one can deny that they may have existed at one time, but, owing to the denuding agency of frost and ice they are now all destroyed. Look at the lesson taught us by the Flower-Pot rocks of the Mingan Islands in the Gulf of St. Lawrence, which at one time formed portions of great sea caverns, the remains of which now lie high up on land some sixty or seventy feet above the level of the sea. The same also with similar flower-pot rocks of Gaspé and of islands in Lake Huron. As I am familiar with most of the land caverns in Canada, the absence of animal remains in almost all of them would point to severity of climate unfavourable for preservation of monuments. An exception to this may be taken in favour of the Mammoth Cave of Kentucky, and Weyer's Hole in Virginia, and probably the great caverns yet to be explored existing in the Middle Silurian Rocks of that portion of Western Canada (now the province of Ontario), extending from West Flamboro, at the extreme western part of Lake Ontario, running northward to Georgian Bay, to the east of Lake Huron. And probably also in a similar series of caverns, which I conjecture will be discovered some day in the northern part of the island of Anticosti, in the Gulf of St. Lawrence, in the same geological formation.

To refer to the monument in the great prairies of Canada, as described by Kalm :—It consisted of great pillars formed of a single stone each, with others laid across the top of them, forming a sort of wall, and their size was such as in some respects to resemble the Druidical monuments of our own country. A single large stone, like a pillar, was met with, and in it a smaller one was fixed, which was covered on both sides with an inscription in unknown characters. This stone, twelve inches by six, was detached, carried back to Canada,

and sent to France to the Secretary of State, the Count de Maurepas. The Jesuits in Canada unanimously affirmed that the letters were Tartarian; and on comparing the two sides of the stone they were found to be alike. If I can claim this ancient monument as Canadian, then it is the only one that has hitherto been discovered, but unfortunately it is lost to science, for its whereabouts to this day remains unknown. Humboldt states that he had in vain requested many of his French friends to make inquiries regarding it. I may say the same of myself, for not only did I make ineffectual inquiries to discover it, but sought for it in the various museums of Paris, in which my efforts were seconded by many powerful and willing friends.

In the western part of Canada there are a few scattered ancient fortifications or embankments called Indian forts, especially in the counties of Beverley, Vaughan, Whitechurch, and the country about Lake Simcoe; there is a remarkable one near the mouth of the small river Huron, on the western or American side of the river Detroit, near Lake St. Clair.

Respecting the earthworks, embankments, fossæ, and ramparts of these fortifications which exist in many parts of the United States, though more sparsely in Canada, I would claim for them an antiquity not later than that of the Roman encampments met with in Britain; and, providing they are situated on land sufficiently elevated, their preservation would be secured for long periods of time. Many of these mounds, and especially some in Canada, have the largest-sized forest trees growing upon the top of them, which always points to an age of many centuries at the very least.

In conclusion, it may be said that, if true aboriginal monuments are few, scarce, or altogether absent in Canada, we have an explanation in the character of the climate, together with that of the aboriginal inhabitants themselves, which certainly points to the superiority of their mental development, in so far, that where so much snow existed for so many months in the year, it would have been the extreme of folly to build temples, monuments, or houses of stone, that would in time become destroyed unless kept in a state of constant repair, by incessant watchfulness, as is the practice and custom at the present day among their more modern successors.

The *only* stone pyramidal edifice north of Mexico is stated to be not far from Newark, near the Ohio and Erie Canal; it stands a large tumulus, built of *stone*, described as a right cone in figure, with an altitude of about forty feet, and a base with a diameter of a hundred feet. Newark is about thirty-six miles south of Sandusky, on the shores of Lake Erie. Regarding the preservation of this aboriginal mound, it must be stated that a comparatively mild winter occurs in Ohio, with but little snow or denuding agency such as exists in Canada.

The crania, however, of the aborigines, as found in the tumuli of Ohio, represent individuals of a very low type, and quite incapable of constructing such noble monuments as are seen in Central America. Yet it has been stated that, anatomically, there is a striking resemblance between the crania of the race of the Mounds and the ancient

Peruvians. And the extension of these mounds, tumuli, etc., through western North America and Mexico to Peru—an assertion which I call in question—induces a belief that the race which constructed them emigrated thither; and their termination there, to the conclusion that the natives went no further. Into the question who were the mound builders I do not purpose going, as the scope of my paper refers exclusively to the Paucity of Aboriginal Monuments in Canada, which I have attempted to explain as briefly as the subject would admit of.

Mr. Gould Avery, Dr. Richard King, Mr. Dendy, Sir Duncan Gibb, Mr. Mackenzie, and Mr. MacCarthy also joined in the discussion.

The meeting then adjourned.

JUNE 14TH, 1870.

DR. BEDDOE, PRESIDENT, IN THE CHAIR.

THE minutes of the last meeting were confirmed.

Logan D. H. Russell, Esq., M.D., was elected a Local Secretary for Wilmington, Delaware, U.S.

The following list of presents was read, and the thanks of the Society were voted to the respective donors:—

TO THE LIBRARY.

From the EDITOR.—Food Journal, No. 5.

From Dr. E. T. RYAN TENISON.—The British Medical Journal.

From the EDITOR.—Scientific Opinion (to date).

From the SOCIETY.—Proceedings of the Royal Society, No. 119.

From the INSTITUTION.—Journal of the Royal United Service Institution, vol. xiv, No. lviii.

From M. AD. QUETELET.—Mémoires Couronnés in 4to, t. 34, in 8vo, t. 21. Bulletin, 2nd Série, t. 27-28. Annuaire de 1870. Phénomènes périodiques, 1867-68. Notice sur le Congrès de Florence, Académie Royale de Belgique.

From the SOCIETY.—Bulletin de la Société Impériale des Naturalistes de Moscou, Nos. 1, 2, 3.

From Dr. KOPERNICKI.—Postac Kasimierza Wielkiego, Dr. Joseph Majer. Lebensbericht van Prof. Jan Van der Hoeven. Prof. G. F. Groshaus.

From the AUTHORS.—Les Carthaginois en France. M. de Marchard et Dr. Pruner-Bey.

The CHAIRMAN announced that Dr. Richard King, Mr. C. Staniland Wake, and Mr. Gould Avery have been appointed delegates to represent the Society at the Liverpool meeting of the British Association.

The following papers were read:—

1. *On the Irish Celt*, by HENRY HUDSON, M.D.

Although Mr. Avery's paper on the Irish Celtic race has scarcely done it justice, he nevertheless has well deserved our thanks for direct-

ing the attention of the Anthropological Society of London to this subject at a time when our rulers are evidently anxious to conquer "England's great difficulty" by giving contentment to the Irish as a nation. It is but too obvious that their efforts to attain this most desirable object must end in total disappointment if legislation be not founded on a due consideration of the characteristics of the people, whom, I have no doubt, they are conscientiously desirous to benefit.

My principal object, however, is not to comment on the past, but to depict the marked characteristics of the Irish Celtic race, and to draw conclusions from thence as to how they ought to be governed.

As a general rule, then, the Celts are a warlike race, brave, but too often rash and hasty, generous and warm-hearted, but improvident, hospitable, affectionate, and grateful for kindness, jealous of honour, dreamy, full of deep sympathies, but irascible, uncertain, and treacherous; despising peaceful arts, labour, industry, order, economy, and cleanliness, they are deeply religious, and, as being so, are but too frequently victims to superstition, under the influence of which they are often a prey to the most abject terror, or susceptible of being excited to outrageous violence and bloodshed without remorse or pity.

Any denial of what the Celt considers justice provokes his unbounded rage and vindictiveness. They are essentially "clannish," from a want of individual self reliance. Their perception and enjoyment of humour or fun is intense, their reasoning faculty is by no means deficient, but their imagination is so much more potent than their reason, that it is through this faculty they are most easily influenced and led whether for good or evil. They are, I regret to say, not truthful, but this may, perhaps, to some extent be attributed to an exuberant imagination. As Knox has said, "How tender are the feelings of the Celtic woman, her tears flow at every tale of distress, but her children are in rags." The Celt is content amid dirt, beggary, or even semi-starvation, unless roused to the idea that these evils are the consequence of injustice or oppression, in which case contentment gives place to deadly hatred, fury, and blindly-vindictive bloodthirstiness, without the slightest reasonable prospect of any good to himself or others from the indulgence of these passions.

I have not spoken of the eloquence with which the Celtic race are so often gifted, for it is chiefly the product of a fertile imagination; in like manner, I have not referred to their love for music, nor to the character of the national melodies, at one time expressive of the utmost tenderness or deepest pathos, at another breathing the wildest spirit of mirth, and often giving utterance to the most heart-stirring call to the battlefield. Although these qualities strongly *indicate* the character of a race, they do not form that character. They are products, not germs.

A few examples may, perhaps, afford a clearer view of some of the most marked characteristics of the Celt. First, then, I have known an Irishman (being utterly penniless) to borrow a few shillings for the express purpose of getting food for his hungry children, and before he went forty paces with the money in his pocket, I have known him give this very money to another who (meeting him) asked his aid to

preserve his own family from starvation. Can anything evidence more strongly the "generosity and warm-heartedness combined with thoughtless improvidence in this fine race?" Secondly, the faction fights which formerly disgraced almost every fair in the country bore the strongest testimony to the "clannish propensities" of the Celt, which are also strongly evidenced by the fact that the Irish always herded together in some one quarter of any town in which a large number of them are to be found, as well as by the tendency to *sub-divide land* (no matter how small the quantity) *amongst all* the members of a family. Thirdly, as to the influence which can be obtained over them for good or for evil. It is impossible not to allude to the long supremacy of Daniel O'Connell. Through his eloquence—so admirably suited to the character of his countrymen—he could rouse his tens or hundreds of thousands to a state of excitement that apparently must end in open violence and rebellion; and yet (until "Young Ireland" took the reins out of his hands in the decline of his power) he possessed such an influence as caused those enormous assemblies of the most excitable race under the sun to disperse and return to their homes with unparalleled quietness and order. The confidence they reposed in him had no limit, and they obeyed him accordingly. The true lesson to be learned is, in fact, that "the Celt *cannot be driven*, but is easily led or guided by any one whom he deems his friend." The character of the Celtic race, which I have so far endeavoured to describe, establishes the conclusion that they are not fitted (like the Saxon race) for organising or living under a mere cold system of "constitutional freedom." If left to themselves they must inevitably fall into the hands of a military leader, or else anarchy is the consequence. It is vain to expect—after the experience of seven hundred years—that climate or any other incident (not even an Act of Parliament) can convert a Celt into a Saxon. How fully does the experience of events not merely in Ireland, but also in Celtic France, point to the same conclusion; and will our Government never open their eyes to let in this light upon their understandings?

How, then, is the Celtic race to be conciliated and ruled for their own as well as the national good? They require a paternal government, with a strong and firm hand to put down the slightest disobedience or resistance to the laws of the land. The most mischievous mistake any government could fall into would be to encourage their *clannish propensities* by any act which would facilitate the "sub-division of land." Any party who is found to excite them either by speech or writing, to treason or hostility to the national Government, ought to be *at once* made subject to the strongest power of the law. Such "escapades" are usually harmless amongst our Saxon brethren, who go home and reason the matter out quietly, but the imaginative Celt broods over the picture of the wrongs inflicted on his ancestors as personal wrongs to himself, and is thus too often led to the perpetration of the most atrocious acts. Let our rulers, then, stretch out their hands to protect the excitable warm-hearted Celt from these dangerous influences. While, on the other hand, nothing could tend more to peace and love in Ireland than the presence of members of

the Royal family—and above all of our most gracious Queen—amongst our warm-hearted and excitable population; they would be easily won to “love and trust her.” Then indeed we might hope to see peace and happiness established in our hitherto distracted country.

There is one melancholy product of the infamous penal laws which formerly disgraced our statutes. This is the almost impossibility of obtaining information or evidence against the vilest criminal, even from parties who had witnessed and *detested the act*. This difficulty has arisen from the dread of being called *an informer*. We cannot wonder that when such laws were in existence, the name of “informer” was considered by the Irish Celt as more odious than “murderer,” or any other conceivable epithet; and it *may* take generations of good government to do away with this feeling amongst our Celtic population, *unless*, indeed, the hierarchy and priesthood of the Church of Rome could be persuaded to announce throughout the breadth of the land that “the rites of their Church (absolution) would be altogether denied to any person cognisant of such atrocious crimes who did not *at once* give every information in his power to the authorities.” This would make the giving of information (in cases of *murder*) a *duty* instead of a *crime* in the eyes of the people, and would almost entirely deter the villains who commit such crimes from attempting them, as, at present, they rely on escaping with impunity, in consequence of the people’s horror of being designated informers.

2. *On the Race Elements of the Irish People*, by G. H. KINAHAN, Esq.

[*Abstract.*]

The present inhabitants of Ireland appear to have a very mixed ancestry. Before Christ we find the island inhabited by the Firbolg and Le Danaan, the latter apparently being an enlightened people, from the remains of the structures erected by them, such as fortifications and huge monumental piles, numerous throughout the island. (The names Danaan and Dane are so similar, that one has been confounded with the other; and the structures and the buildings erected by the Danaan are said to have been made by the Danes.)

After the year A.D. 790, the Danes and other northmen invaded and settled in different parts of the country, but generally at or near the coast; also colonies from other parts of the Continent of Europe, but it is generally supposed principally from Spain and Portugal. The descendants of all these different tribes and nations that settled in Ireland prior to the English invasion, in the thirteenth century, appear to have been classed under the general name of Celt; however, after the descent of the Saxons on Ireland in the thirteenth century (12th?), the great mixture of the races seems to have began, which has increased more and more up to the present day.

In Ulster there was an invasion of foreigners, principally from Scotland; the English of the Pale settled on the west coast; while mercenary soldiers, that seem to have been collected from different places in Europe, occupied parts of Connaught and Munster. In after years every new Lord Deputy of Ireland confiscated parts of the country from the Irish inhabitants, and gave portions to their minions; but

in James's, Cromwell's, and William's reigns there were wholesale confiscations to make way for emigrants from England.

It might be supposed that these foreigners would only have occupied the good land, and have left the wild mountainous country to the Irish. This, however, is not the case, for the latter emigrants drove out the descendants of those that came earlier from the good land. Moreover, grants of all the wild country were given to persons of foreign extraction.

From the intermarriages of these different races there is now no type to be found by which to judge whether an individual is of Celtic origin or otherwise; for many of the inhabitants, with a true Irish name, such as O'Flahertie, will be fair while the others are dark, some will be tall, others short, etc., etc. And similarly among the inhabitants whose names would lead you to believe they were descended from foreigners.

3. *On the Kelts of Ireland*, by JOHN BEDDOE, M.D., President, A.S.L. (The paper appears in the *Journal of Anthropology* for October.)

[Abstract.]

The principal points proved or indicated in it were the following:

That the Kelts known to the Greek and Latin authors, though they were a light-haired race as compared with the Italians, were darker than the Teutonic tribes; and that their physical type differed in other respects.

That the Irish are, generally speaking, a dark-haired but light-eyed race, and that wherever there is much light hair it may be accounted for by a Danish or English cross.

That the dark hair of the Irish may be, partly at least, attributed to the Gaelic Celts.

That there is less resemblance between the Irish, taken as a whole, and the Basques, who are generally considered to be the purest Iberians extant, than between the South Welsh and the Basques.

That any Basque or Iberian element in Ireland is probably small, and can have only partially contributed to the prevalence of dark hair among the Western Irish. That Ugrian or Ligurian elements may also be present there.

The paper was illustrated by minute details respecting the physical types in various parts of modern Ireland, including extensive observations on the colour of the eyes and hair; and the author exhibited a number of photographic and other portraits of Basques and of Bretons, Welshmen, Walloons, and other supposed descendants of the Keltic race.

The CHAIRMAN having invited discussion on the above papers together,

Dr. CARTER BLAKE, though he avowed himself one of the unhappy subjects of Dr. Hudson's paper, would endeavour to keep strictly to the question of the physical aspect of the Irish, as he did not consider it necessary to vindicate them morally or socially. He thought two types at least might be discerned. One, the dolichocephalous, low-browed, with large superciliaries, black-haired and grey-eyed type, which was found in Munster and Leinster, and which was shown in

such skulls as the Louth, the Glenarm, the Corcomroo, and other well known specimens. This high type pure blood Irishman, perhaps, in some well-known clans (*e. g.* O'Neill) shaded into the "Scotch" type in Ulster. Whether Ulster was peopled from Scotland, or Scotland from Ulster, mattered little in the argument, as both were the same race. This type agreed with the type of the Spaniard from Santander, of which Dr. Beddow had shown a photograph, and differed entirely from the typical Basque type. But the other Irishman, the "Con-naught man," who was perhaps also found in Kerry, as shown by Dr. Beddow's "Arran" photographs, was another being altogether. Mongoloid in aspect, with the *orbicularis oris* muscle strongly marked, we see in Mr. Tenniel's caricatures in *Punch* examples of this type. Surely there was no race affinity between these two forms of Irish countenance, and it was wrong to take the "Arran" type as an example of the true Irishman. But Dr. Carter Blake felt interested in the type which Dr. Beddow had described from Connemara, "small, black-haired men." Were they brachycephalic? Did they have the same affinity to the true Celt that the Kymry of North Wales bore to the Silures? Were they, in fact, relics of a pre-existent Ugrian or Ligu-rian race, as M. Pruner-Bey had hinted? These were only questions, to which he was not going to answer; but one fact was at least clear, that there was nothing like the Basques in Ireland.

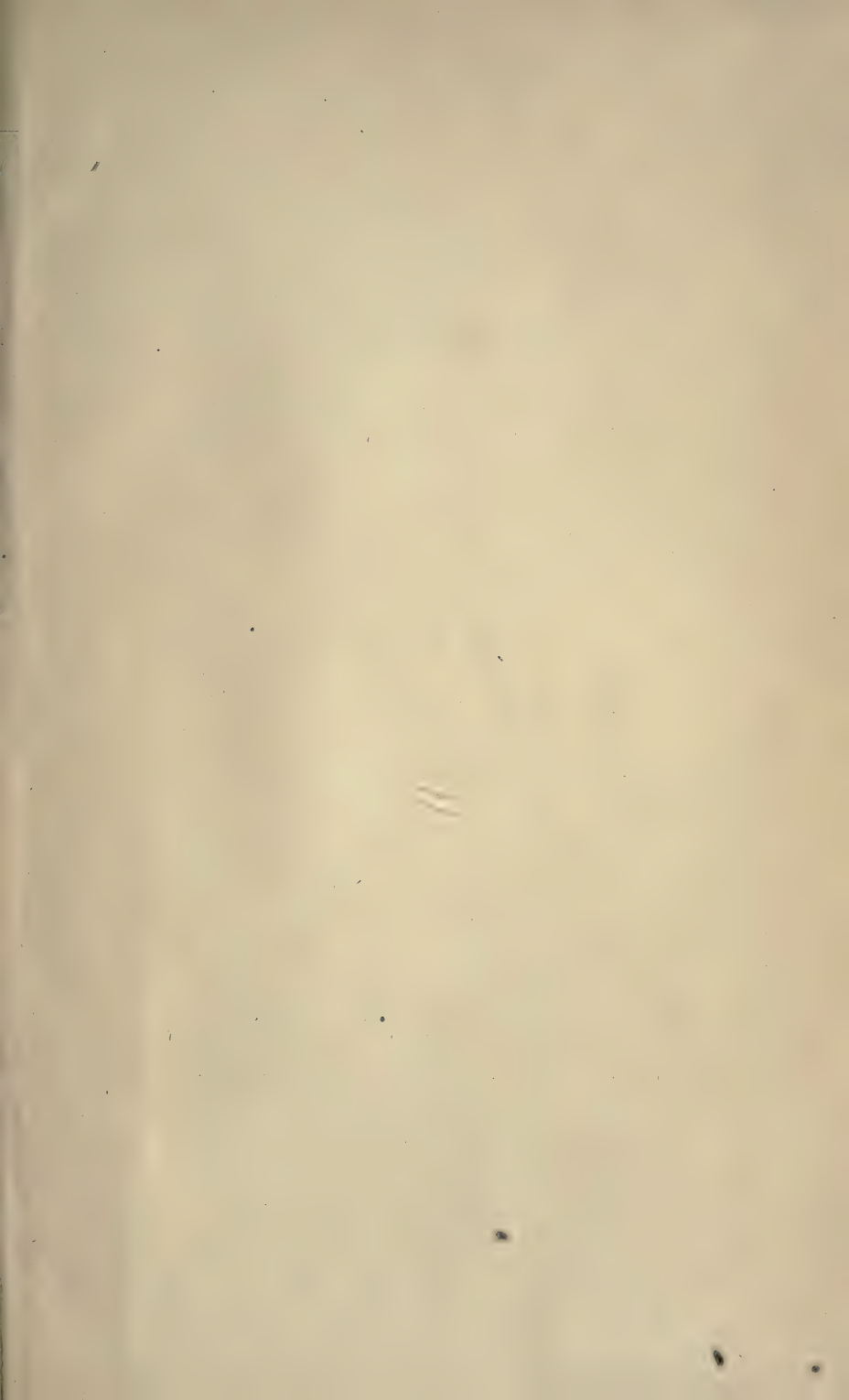
Dr. CHARNOCK said his remarks would be confined to Dr. Beddow's paper. The latter stated that the Spanish element prevailed most in Kerry. He, Dr. Charnock, always understood that it was principally in Galway that the Spanish element was to be found. With regard to stature, that of course depended upon external circumstances. In the north and north-east, and, indeed, in most parts of Ireland, except the west, the people are a mixed race. This remark was applicable to the Tipperary men. Mixed races generally produced fine men. The author of the paper seemed to a certain extent to use the terms "Basque", "Iberian", and "Spanish" synonymously. Now there was as great a difference in every respect between the Basques and the Spaniards proper, as between the English and the Chinese. The term "Iberian" was sometimes used for "Basque", sometimes for "Spanish." It was also applied to the north-west corner of Spain, and, by classical writers, to the whole Peninsula. Originally, no doubt, Iberian simply related to the people inhabiting the banks of the Iber or Ebro. Further, the term "Iberia" was given to a country of Asia Minor, between the Black and Caspian Seas, inhabited by a people having nothing in common with the inhabitants of the Peninsula. Dr. Beddow said that, in order to treat the subject in question properly, an intimate acquaintance with the Celtic, Teutonic, Euskarian, and Ugrian languages was necessary. Now, the excellence of the paper itself rather disproved this assertion. The fact was that, although it was possible that some Teutonic words might have found their way into the Irish language, he, Dr. Charnock, had not been able to trace a single word to the Basque, the Finnish, the Magyar, or to any of the Ugrian dialects.

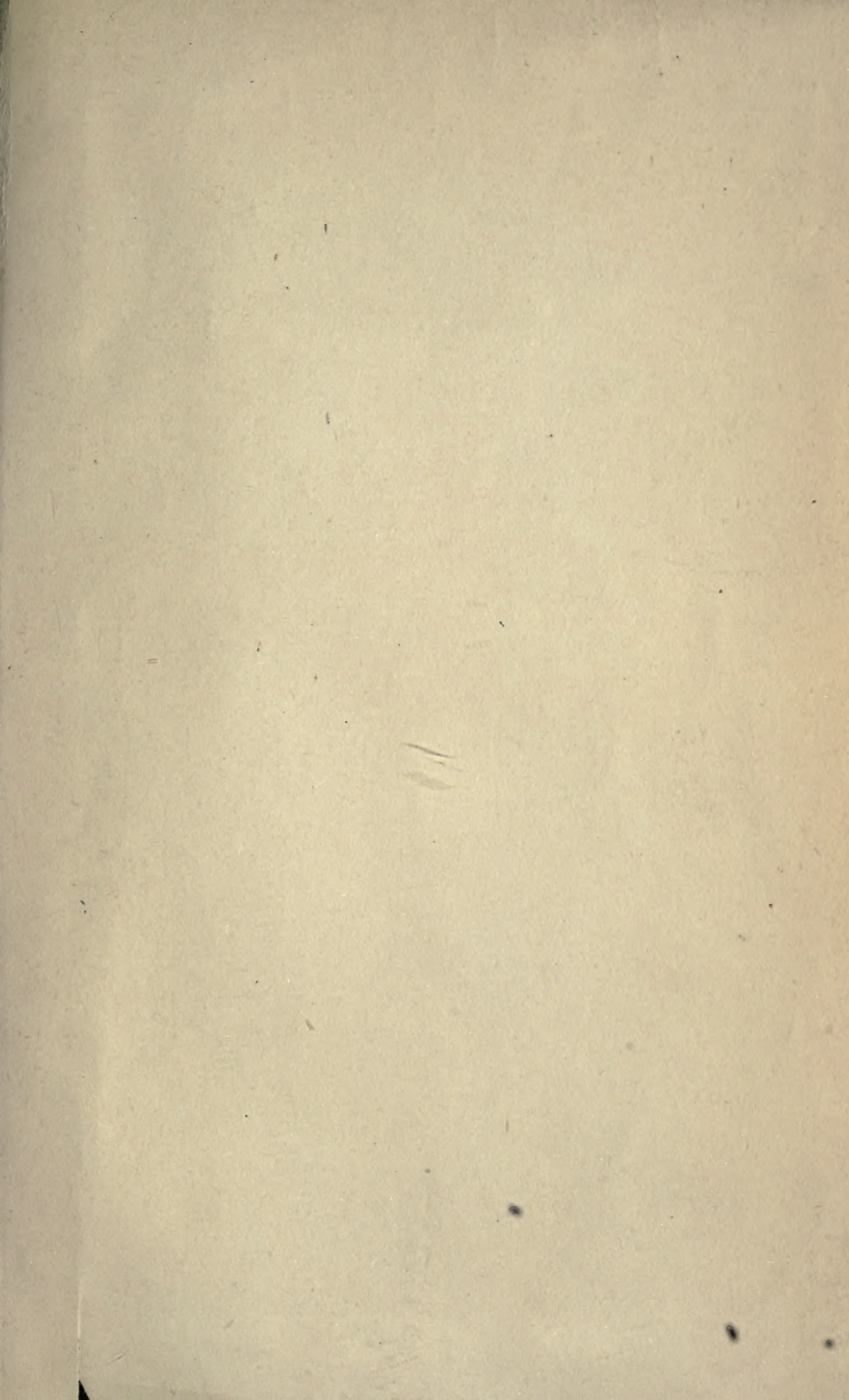
The discussion was further sustained by the Rev. Dunbar I. Heath;

Professor Henry, of the Smithsonian Institute, Washington; Mr. Walter Dendy; Mr. J. E. O'Cavanagh; Mr. Edward J. Wade; Dr. Seemann, and the Chairman.

It was proposed by Dr. SEEMANN, seconded by Mr. MACKENZIE, and carried unanimously :—"That this meeting of the Anthropological Society has listened with peculiar pleasure to Professor Henry's account of the Smithsonian Institution, and takes advantage of his presence to express its appreciation of the enlightened policy of that useful Institution."

The CHAIRMAN having announced that the new *Journal of Anthropology* would be issued to Fellows in July, adjourned the meeting until next Session, to commence November 1st.





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